THE Soybean Digest

Iowa's Bob Weber and the new Adams soybean. See page 14.

Official Publication

AMERICAN SOYBEAN ASSOCIATION

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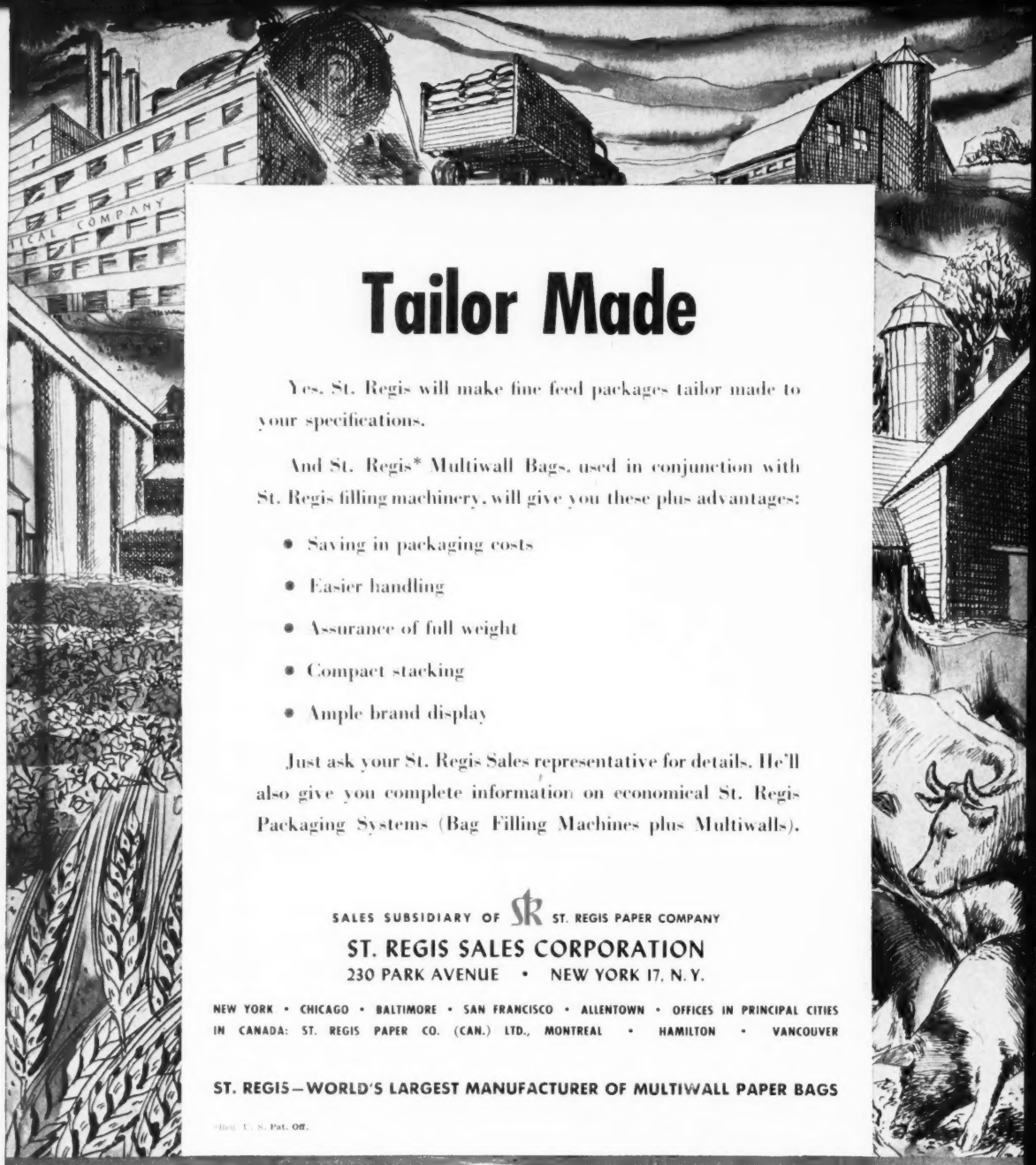

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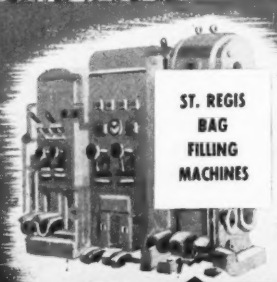

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IN THIS ISSUE

	page
Editor's Desk	4
Growers	8
Letters to the Editor	9
Association Activities	13
Adams, a New Soybean	14
CHARLES R. WEBER AND MARTIN G. WEISS	
Importance of Soybean in Nutrition	16
J. F. LYMAN	
Visitors from England, Germany	17
Versatile Soybean	18
J. L. GABBY	
"Hallowe'en Extraordinary"	19
JERRY WAREHAM	
Morrison's Feeds and Feeding	19
Citric Acid for Better Dressings	20
Begin Production of "Zest"	22
USDA Estimates 210 Million Bushel Crop	23
Soy Flour Study by Laboratory	24
Soybeans in Minnesota	26
GEORGE A. POND	
Introduced Otootan, Arksoy	27
Publications	28
Newton, Ill., Queen	29
Grits and Flakes	30
Washington Digest	34
PORTER M. HEDGE	
Market Street	35
In the Markets	36

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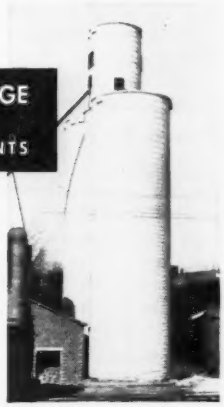

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EDITOR'S DESK

Should Be on Basic List Soybeans should now be included in the list of basic commodities under the federal price support program. Last year 60 percent of the vegetable protein meal of the United States came from soybeans. At the same time approximately one-half of the edible vegetable oil produced in the United States came from soybeans.

The list of basic commodities is due for revision because there has been a definite shift in emphasis between crops in the United States since the current list was established before the war. The nation has become self-sufficient in fats and oils, for the first time in generations. Soybeans have grown from a minor crop into the major oilseed. That shift merits consideration.

Officers of the American Soybean Association have recently instituted action toward the addition of soybeans to the basic commodity list. Congressional action will be necessary before the job can be done. In writing and considering the long-range farm program during the coming session of Congress consideration should be given to revision of the basic commodity list.

When writing or talking with your Congressmen and Senator be sure to mention the importance of this. Over the next decade the shift from a mere supported crop to a basic crop can mean much to the soybean industry. It will be done only if you tell your representatives in Congress that it should be done, that you favor it and believe it imperative. There are now on the basic commodity list crops and commodities less important to the food welfare than soybeans. The list needs revision. Soybeans must be included in the new list.

Secretary Sawyer Should Act Now Repeatedly since September directors and officers of the American soybean Association have pointed out to governmental officials the importance of adequate export allocations on soybeans, and the great desirability of early announcement of those allocations. Since the first announcement of the Association request that a minimum of 10 million bushels and a maximum of 10 percent of the 1948 crop of soybeans be allocated for export to Europe and Asia, allocations of just short of 8 million bushels have been set up.

But further allocation announcement is needed now. A portion of the 1948 soybean crop, variously estimated at 35 to 50 percent of the total crop, is still owned by producers. The allocations should be announced now, while any price effects will be reflected to the men who grow the beans, rather than to other segments of the industry. Soybeans will continue to be grown only as they are profitable to the grower. Over a period of years the grain buyer and the processor will benefit through sustained acreage which will come as a direct result of 1948 crop exports.

Officials of the Department of Agriculture favor further exports. The State Department favors further export allocations. The bottleneck is the third governmental agency concerned with export allocations—the Department of Commerce. Up to the present time the bottleneck in exports has been Secretary of Commerce Sawyer, who in his zeal to protect the consumer of foodstuffs in the United States has refused to honor added allocations. It is hoped that recent conferences of ASA officials with Secretary Sawyer will result in early action.

One bushel of soybeans shipped to Germany will supply a German worker the additional protein needed to raise the protein level of the diet from a bare subsistence to one adequate for continued hard labor for a full year. It will mean the difference between slovenly production and rapid and conscientious production. It will provide health for the body and mind, increase the work load and the will to do.

To Germany soybeans are human food. To the United States the protein of soybeans is largely livestock feed. In the diet of the German people soybeans, as providers of protein and fat to supplement the supplies of carbohydrates, are vital. Meat products are not available. The protein and the fat must come from vegetable sources. In the form of soybeans they can be supplied much cheaper and more efficiently than from any other crop.

The United States has been blessed in 1948 with the largest soybean crop in history, a huge cotton crop, a large flax crop. Our supplies of edible oils and vegetable proteins are sufficient for our own needs and provide sizable quantities for export. Europe has favorable supplies of carbohydrate foods. She needs proteins and fats to supplement them.

We can export 10 percent of our 1948 soybean crop and still retain more bushels of soybeans for domestic processing than have ever before gone through our mills. Additional allocations of soybeans will not short-change the American processor.

Secretary of Commerce Sawyer should immediately allocate additional soybeans so they will be received in Europe during the winter months, when most needed. We hope he will do so. He alone is responsible for the failure of America to provide adequate protein diets for European peoples. The politics of Europe is inseparably tied up with food supplies—protein and fat. Now is the time for our Secretary of Commerce to act.

Let's Keep in Mind The Democratic victory in November changed the picture on margarine legislation. Repeal of the Federal margarine laws, restricting and taxing the manufacture and sale of margarine, was included as a plank in the Demo-

To all our Friends in the World of Soy: Our Holiday Greetings and best wishes for a Happy and Prosperous 1949. —The Soybean Digest Staff.

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cratic platform, has since been reaffirmed by President Truman. Many of the members of Congress who were most strongly opposed to margarine tax repeal have been replaced.

Four of the members of the agricultural committee of the House of Representatives who fought hardest to defeat the repeal bill in the last session lost their seats in Congress. They were not awake to public sentiment, did not recognize the trend of the times. They lost their jobs as a result.

A flood of margarine tax repeal bills is expected the first day the 81st Congress convenes. Whether or not there will be hearings by the committee on agriculture of the House of Representatives remains to be decided. Such hearings would accomplish little or nothing—the facts were presented last year, have not changed. Nothing will be accomplished by another hearing.

The opponents to change of the present laws are hard at work. They have made an about-face, have reversed their former position in an effort to salvage a portion of what they have. Concession that all taxes should be removed, as reported in the November *Soybean Digest*, places the butter manufacturers in the embarrassing position of admitting guilt, admitting that all their arguments over the years were unadulterated eyewash, and now places them in the position of trying to maintain something which is indefensible.

Repeal of the federal license fees an taxes on margarine can now be expected in the 81st Congress, if all interested groups cooperate as expected.

There are two salient facts which should be kept in mind—two things which are of major importance to the growers of soybeans:

1. The time may not be far off when the production of fats and oils in the world will again equal or exceed the demand for food needs. Tropical oils will again become far cheaper than those produced in this country. We can not afford to allow ourselves to again become dependent upon other parts of the world for our supplies of edible fats. Any margarine legislation passed should remove the restrictions and taxes only on margarine made from domestically produced fats and oils. Present restrictions should apply to margarine made from imported fats. In any consideration of margarine legislation the farmer as well as the consumer should be considered.

2. The grower of soybeans and the grower of cottonseed have no quarrel with the producer of dairy products. They are essential to our agricultural progress, just as are soybeans. The yardstick of values in the dairy industry is at fault in that butterfat is overemphasized and thus overpriced. Resistance to needed adjustments comes, not from the producers, but from the handlers and manufacturers. Similarly, the resistance to the needed adjustments in margarine law comes, not from the producer of dairy products, but from the middle-men of the industry.

Margarine is our second largest market for soybean oil. We must protect and expand it in every way possible.

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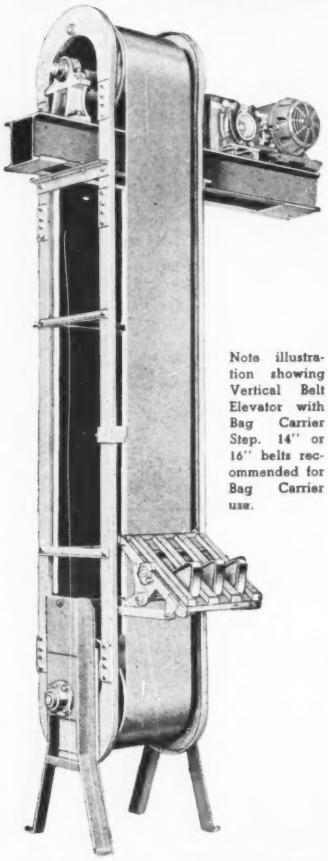

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GROWERS

Iowa maximum price for Hawkeye soybean seed has been apparently set at $4.20½. This is $1.50 above the Chicago spot price December 1, and is the price at which Iowa producers have contracted to sell.

The Iowa price is materially under the Illinois price set at $6 and that in Ohio, set at $5.50.

Hawkeye should replace Richland in Indiana because of its higher yield and higher oil content, say A. H. Probst and G. H. Cutler of the Purdue Station. It is adapted to the same areas and conditions as Richland in Indiana.

You can obtain complete information on Hawkeye in Indiana, including its adaptation and availability of seed by writing Purdue University Agricultural Experiment Station, Lafayette, Ind., for *Circular 343*. Its title is "Hawkeye Soybeans for Indiana."

Probst and Cutler are the authors.

Macon County, Ill., reports indicate that the Hawkeye soybean has run up a good production record, says *Prairie Farmer*. Farm Advisor Thurman Wright says growers are averaging 31.2 bushels to an acre. This compares with a yield of from 24 to 26 bushels an acre for Lincoln beans grown by the same farmers.

Total yield of the 224 acres of Hawkeye beans grown by the 13 farmers reporting was 6,747 bushels. Hawkeye beans are a relatively new type released by the University of Illinois to farmers this year on a county allocation basis.

Minnesota Harvest

The first load of soybeans that reached the Minneapolis market this fall was shipped from Clara City, Chippewa County, town that has claimed the title of soybean capital of Minnesota for the past 3 years, reports Emil A. Swanson, editor of the *Clara City Herald*.

This carload was shipped on September 15 from the Clara City Farmers Elevator Association. About 200,000 bushels of soybeans have been received by the local elevators.

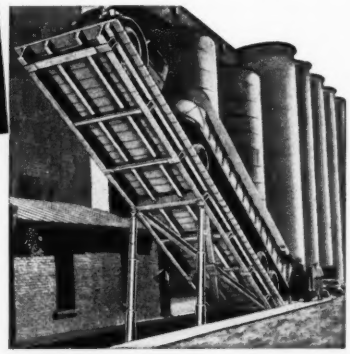
Quality this year was exceptionally good, and yields of as high as 35 to 40 bushels per acre were reported. More acreage was devoted to beans this year than last, and it is believed that about the same acreage will be put in next year, depending on the spring weather. Main Chippewa County varieties are Manchu, Pridesoy and Mandarin.

Storage was something of a problem this year, says Swanson.

Soybeans and Tobacco

O. S. Gibson, Boyle County, Ky., farmer, has found that to succeed with chemical sterilization of tobacco plant beds, it is a good practice to sow soybeans following tobacco setting, reports *Southern Tobacco Journal*. He has had no failure in the 3 years he has used this plan, according to Farm Agent John C. Brown. Last year, for example, Mr. Gibson supplied vigorous plants from a bed 9 by 180 feet for his own 2 acres and for 4 acres for neighbors. He

Kewanee Hydraulic Dumper



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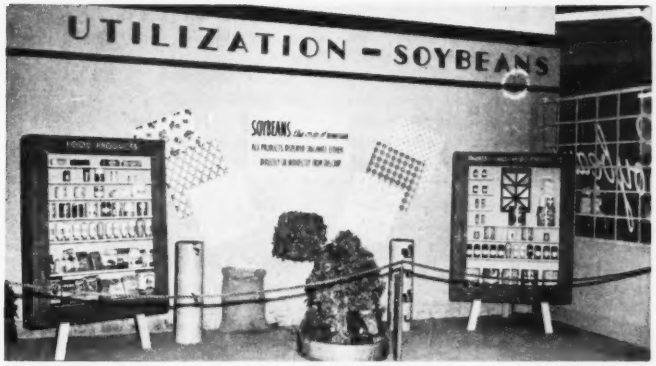

Part of the soybean and flax exhibit of the Minnesota Crop Improvement Association which attracted many visitors at the 1948 Minnesota State Fair. This is a close-up of the section on soybean utilization. All products shown were manufactured either directly or indirectly from soybeans. There were also sections on varietal improvement and production and marketing.

recently plowed the bed for the 11th year in the same spot.

Mr. Gibson's practice is to apply 150 pounds of cyanamid about 2 weeks after the soybeans are turned under in the fall. He discs in half the amount 4 or 5 inches, then rakes in the remainder with a hand rake.

Soybean Hay Show

Clinton Campbell was first-place winner of the 1948 Hempstead County (Ark.) Laredo Soybean Show for 4-H boys in September, reports Byron Huddleston, assistant Hempstead County agent, Hope, Ark.

Young Campbell produced 50 bales of soybean hay of 60 pounds or more from an acre to place first in the show. He followed production practices in detail as instructed, applying 200 pounds of 5-10-5 complete fertilizer and planting in 42-inch rows.

Thirty-eight 4-H club boys entered the county Laredo soybean demonstration, and 13 entered standard bales of soybean hay in the show. Seed and inoculation were secured through the organization plan.

Quality of the hay on the whole was fine-stemmed, bright, leafy and of high quality. Laredo soybeans were selected because of their general adaptability and resistance to nematodes.

Butterprint

"What are we going to do about the butterprint (also known as buttonweed and velvetweed) in soybeans?" asks Russell S. Davis, Clayton, Ill. "Even the casual observer, driving along the highway, can see the rapid increase in the spread of this weed in the soybean fields.

"Fields that only a few years ago didn't have a butterprint in them are now pretty well seeded. And it is not uncommon to find a field where the weeds have almost completely covered the crop of beans.

"Is 2-4D (used in cornfields) the answer?"

LETTERS TO THE EDITOR

Overlook Facts

To the Editor:

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in a mechanized farming than dairy cows for the average farmer. More and more dairy cows and mechanized farming are parting company in this territory.

One recalls the plea and presentation of the dairy industry re butter versus margarine even to the extent of picturing starvation if margarine legislation was passed. How unfortunate this great industry, a vital part of our American agriculture, overlooked that the press was informing the public of facts, also that a very, very small percent of the total milk was used for butter.

Such short-sighted policies can result in the passing of legislation in the near future whereby fats and oils produced in foreign countries at very low costs will compete with the American farmer.—J. E. Johnson, Champaign, Ill.

Japan Association

To the Editor:

The Japan Soybean Association was founded on March 4, 1946 for the purpose of increasing production of soybeans, improving varieties and increasing the rational utilization of soybeans.

As is well known, soybeans are an Asiatic crop which have been utilized as food for centuries. Before the war, Japan relied on importation from Manchuria and Korea for a major part of its supplies, but since the termination of hostilities, these sources have been cut off. Consequently, Japan has to rely on its own production and also on importation from other sources. This other source is the United States, whose soybean history is relatively new but which has expanded so rapidly that it has become the largest producer in the world. Since the end of the war, Japan has imported 42,569 tons as of October 10, 1948, by which she has been able to fill the minimum requirement.

The Japan Soybean Association is planning to have a Soybean Exhibition on January 20, 1949 at one of the leading department stores in Tokyo and we would like to have if possible, some exhibits or literature from your Association. Expansion of soybeans in the industrial field in the United States is tremendous and we would like to know as much as possible about the production and use of soybeans in the United States.

We shall appreciate it if you can help us with this exhibition and also keep in close touch with you.—*T. Kurakake, secretary, The Japan Soybean Association, Chuo-ku, Tokyo.*

Korean Soybeans

To the Editor:

The article "The Rickard Koreans" in the August 1948 issue of the *Soybean Digest* has been read with some interest but some of the statements made require correction.

Over a period of several years the late E. T. Rickard paid occasional visitis to this Station and our discussions of various soybean problems were always very interesting. During one of these visits mention was made of our Early Korean variety, which we had been growing since 1923, as one of promise but which had never become popular due to the large size of its seed. Since we did not have a quantity of the seed available Mr. Rickard was directed to W. G. Baldwin whom we had previously supplied with a small sample of Early Korean amongst other varieties for trial. This gave Mr. Rickard h's start with Early Koreans and if this variety has succeeded in finding a place in the soybean picture we would like to feel that something has been contributed.

Since we have test data on this variety as far back as 1923 and have used it in many crosses, the lines from which are still being carried, we must disagree with the statement that "little or nothing was done with this variety." We have been well aware of the yielding ability and earliness of this variety for many years and have utilized these qualities in our breeding program.

In all fairness to the late Mr. Rickard, with whom we had many pleasant visits, and to the Early Korean variety which apparently has been found valuable under certain conditions, we feel that the background of experimental work done previous to the time Mr. Rickard obtained this seed should be credited to the Dominion Experimental Station at Harrow, Ont.—*C. W. Owen, Asst. Forage Crops, Experimental Station, Harrow, Ont.*

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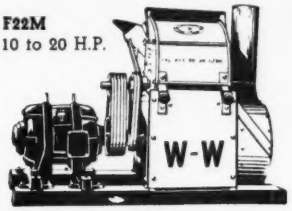

Feed opening 18" wide and a perfect pulverizer as well as coarse grinder. For small feed plants will quickly pay for itself in low grinding costs.

F25M
25 to 40 H.P.

Feed opening 18" wide and with cylinder larger in diameter than F22M. Our most popular model for all types of grinding or pulverizing.

F18-0-18M
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Same size as F25M but higher grinding chamber and solid hood permitting easy spouting into. Screens change in front quickly and with greater ease.

A complete range of sizes and models. Grinders for wet, dry—and for materials of high grease content. No matter what you have to grind there is a W-W model to suit your needs.

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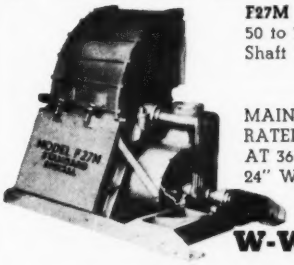
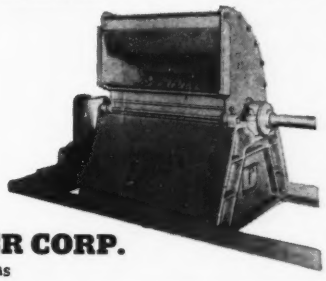


F27M
50 to 75 H.P.
Shaft 4¾"

MAIN BEARINGS
RATED 3450 LBS.
AT 3600 R.P.M.
24" WIDE



F29M
100 to 150 H.P.
Shaft 4¾"

MAIN BEARINGS
RATED 3450 LBS.
AT 3600 R.P.M.
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Wichita, Kansas

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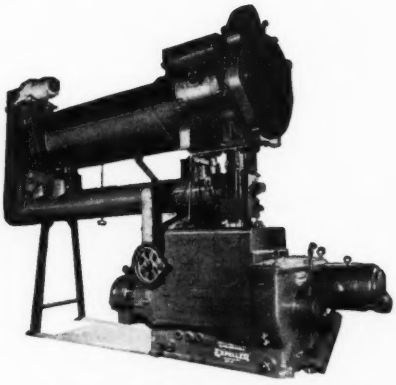

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ACTIVITIES OF YOUR ASSOCIATION

Agriculture is being outsold in the Marshall plan, Ersel Walley, president of the American Soybean Association, Fort Wayne, Ind., told the Western Grain and Feed Association convention in Des Moines November 22.

Nobody is making it his job to sell farm commodities while representatives of industry are busy pushing their products, according to Walley. He said that proteins and fats are now the basic commodities needed in Europe.

American grain is a potent weapon in the "cold war" in Europe, according to Walley.

"We must be realistic," he said, "and support the Marshall plan. There may be some corruption in administering the plan but if we are to win the hottest cold war known in history we must support some such endeavor as the Marshall plan for a number of years.

"A gun with ammunition in the hands of one of our European friends can be helpful to our preservation only if that man has adequate food with which to fight."

He said that "no force in the world can save Europe from chaos and the danger of Soviet domination unless that force involves the supplying of food to these peoples."

Because of the government program Walley expects that exports will continue at a high figure for several years unless Russia tries to take over Europe.

"Then," he said, "our market is gone."

Walley spent 3 months in Europe this past summer studying agricultural conditions there.

He was also noon luncheon speaker at the fall meeting of the American Society of Farm Managers and Rural Appraisers in Chicago November 29; and the main speaker at the Remington Soybean Show December 14.

The American Soybean Association booth at the fall meeting of the American Society of Farm Managers and Rural Appraisers at Hotel LaSalle in Chicago November 28, 29 and 30 was in charge of Paul C. Hughes, Association's field service director.

Purpose of the booth was to acquaint convention attendants with the Association's program and to enlist their interest in the program.

Standing committees of the American Soybean Association for 1948-49 have been announced by President Ersel Walley, as follows:

Awards—John W. Evans, Montevideo, Minn., chairman; J. B. Edmondson, Danville, Ind.; J. W. Calland, Decatur, Ind.

Legislative—Geo. M. Strayer, Hudson, Iowa, chairman; Ersel Walley, Fort Wayne, Ind.; J. W. Evans; Howard Roach, Plainfield, Iowa; Jacob Hartz, Jr., Stuttgart, Ark.; W. G. Weigle, Van Wert, Ohio; David G. Wing, Mechanicsburg, Ohio.

Nominations—G. G. McIlroy, Irwin, Ohio, chairman; W. G. Weigle; Frank Garwood, Stonington, Ill.; Jacob Hartz, Sr., Stuttgart, Ark.; H. I. Cohn, Wrights, Ill.

Resolutions—Howard Roach, chairman; O. H. Acom, Wardell, Mo.; W. M. Scott, Tallulah, La.; Walter W. McLaughlin, Decatur, Ill.; R. H. Peck, River Canard, Ontario; K. E. Beeson, Lafayette, Ind.

Cooperation with foreign relief agencies—John Dries, Saukville, Wis., chairman; Leroy Pike, Pontiac, Ill.

—s b d—

LOWER MARGINS

The board of directors of the Chicago Board of Trade has voted to reduce minimum initial margin requirements on grain futures transactions, other than hedging or spreading transactions, to 20c a bushel on wheat, 15c a bushel on corn, 25c a bushel on rye and 20c a bushel on soybeans.

No changes were made in the current margin requirements of 10c a bushel on oats and 30c a bushel on barley.

The Board voted that margins on all commitments in grain futures transactions, other than hedging or spreading transactions, shall be maintained at clearing house margin requirements as a minimum. The margin action became effective November 5.

—s b d—

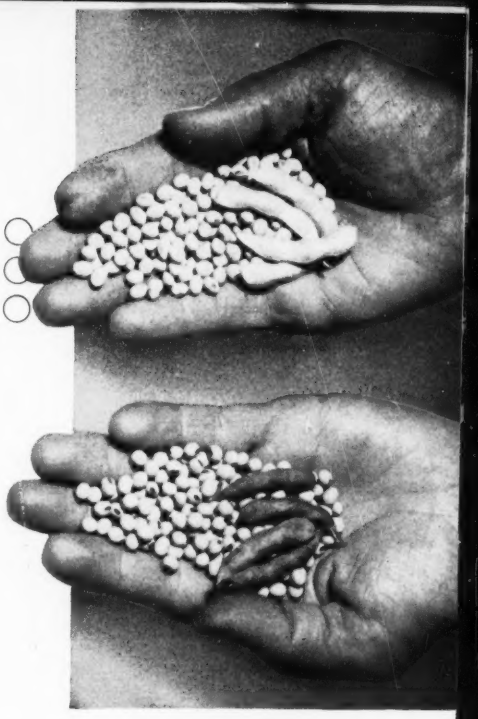
AT CENTRAL SOYA

Central Soya Co., Inc., Decatur, Ind., has just completed a program of modernization and installation of new equipment in its products division that cost over one-quarter million dollars.

Improvements include new stainless steel equipment used in processing soy albumen and other protein food products, new continuous process to produce the firm's line of specialty soy flours, and revision of lecithin operations in line with the latest technological developments.

ADAMS

—a new soybean



Here is a comparison of Adams and Lincoln. The top is Adams, the bottom Lincoln. The pods and beans of Adams are lighter in color than Lincoln. Both varieties have yellow colored seeds.

By CHARLES R. WEBER and MARTIN G. WEISS

ANOTHER NEW soybean variety is on the way. It isn't the last word in varieties, but it is slightly superior to the Lincoln variety in a number of characteristics. In addition, it will help Lincoln shoulder the production load in central and southern Iowa.

Briefly the high points of Adams as we have found them through 4 years of testing in Iowa are as follows:

- It yields a little higher than Lincoln.
- It ripens about a day earlier than Lincoln.
- It is the same height as Lincoln but stands up a little better.
- It has a little more oil than Lincoln.

To be brief Adams is a little better than Lincoln and yet they aren't related at all. It is slightly superior to Lincoln in four characteristics and not inferior to Lincoln in any respect. Adams will compete favorably with Lincoln. We don't recommend that Adams replace all the Lincoln but only that it share in the large acreage now planted to Lincoln in central and southern Iowa. Adams will compete with Hawkeye, the earlier, stiff-strawed variety, in central Iowa, where it has a little higher yield than Hawkeye.

Beginning of Adams

Adams got its start at the Iowa Agricultural Experiment Station in cooperation with the U. S. Regional Soybean Laboratory.[1] Back in 1938 the Illini and Dunfield varieties were crossed. Single plant selections were made in that cross for five successive generations.

Some of the selections appeared good in early generations. They were watched and measured for various desirable plant characteristics. When our tests indicated that Adams had promise, it was tested in many states, beginning in 1944, by the U. S. Regional Soybean Laboratory and cooperating state agricultural experiment stations. It also performed well in these regional tests.

Appearance of Adams

Adams resembles its parents in a number of ways. It has white flowers like its parents Dunfield and Illini. It also has gray pubescence (the hair on the stem and leaves) like its parents. At maturity it has light colored pods which are predominantly 3-seeded like its Dunfield parent. Adams' habit of growth resembles Dunfield a little more than it does Illini. The seed of Adams is pale yellow to whitish yellow with a buff to light brown hilum (scar on the seed). The seed is slightly oblong and as for size—it is midway between the parents.

Record of Adams

The results of the Iowa tests reported in the table were obtained in central and southern Iowa. These data were obtained over the 4-year period 1944 through 1947 (the 1948 results are not yet available). You will note that Adams yielded a little better than Lincoln. Adams outyielded Lincoln in 16 of the 18 tests during this 4-year period. It was consistent.

Adams has stood up only slightly better than Lincoln during these tests. But

[1]The U. S. Regional Soybean Laboratory is a cooperative organization participated in by the Bureau of Plant Industry, Soils and Agricultural Engineering, Agricultural Research Administration, of the U. S. Department of Agriculture, and by 24 state agricultural experiment stations.

• *Reprinted from IOWA FARM SCIENCE. Art work and photos are from that publication. Charles R. Weber is in charge of soybean breeding projects at the Iowa Agricultural Experiment Station, and associate agronomist of the U. S. Regional Soybean Laboratory, stationed at Ames. Martin G. Weiss is professor of farm crops at Iowa State College. Adams resulted from a cross between Illini and Dunfield. Statements concerning adaptation of Adams and its distribution apply only to Iowa as no other state is releasing the variety at this time. The variety is adapted to the same general area as Lincoln.*

it stood up well enough for combining and averaged the same height as Lincoln.

Adams also was a little better than Lincoln in protein and oil content. These characteristics, too, were consistent from year to year during these tests.

The data show on the average Adams matures a day earlier than Lincoln. Therefore it can be recommended safely for the same areas of the state as the Lincoln variety.

In central Iowa both Adams and Hawkeye, the variety released in 1948, are adapted. In comparison with Hawkeye, Adams yields only slightly better, is an inch taller, does not stand up as well, and matures 6 days later on the average.

Plans for Distribution

The method of distributing Lincoln and Hawkeye soybeans and Clinton oats was carefully considered. The main purpose in mind was to make these new varieties available to the most Iowa farmers in the shortest possible time. In previous years when a new variety was released often there was a lapse of 6 years before all farmers desiring the variety were able to get it. Now 2 years is usually sufficient to put a variety, at reasonable prices, into the hands of anyone who wishes to grow it. Therefore the plans for the distribution of Adams are essentially the same as those used in the release of Lincoln and Hawkeye soybeans and Clinton oats.

About 1500 bushels of Adams were produced in Iowa this year (1948). This will go to farmers in the southern four tiers of Iowa counties. Each of the 45 counties in this area is entitled to a portion of the Adams seed. The counties will receive allotments of Adams seed in proportion to their acreages of soybeans harvested in 1947.

Each county that wants seed must set up a county seed distribution committee. This will be done under the supervision of the county extension director.

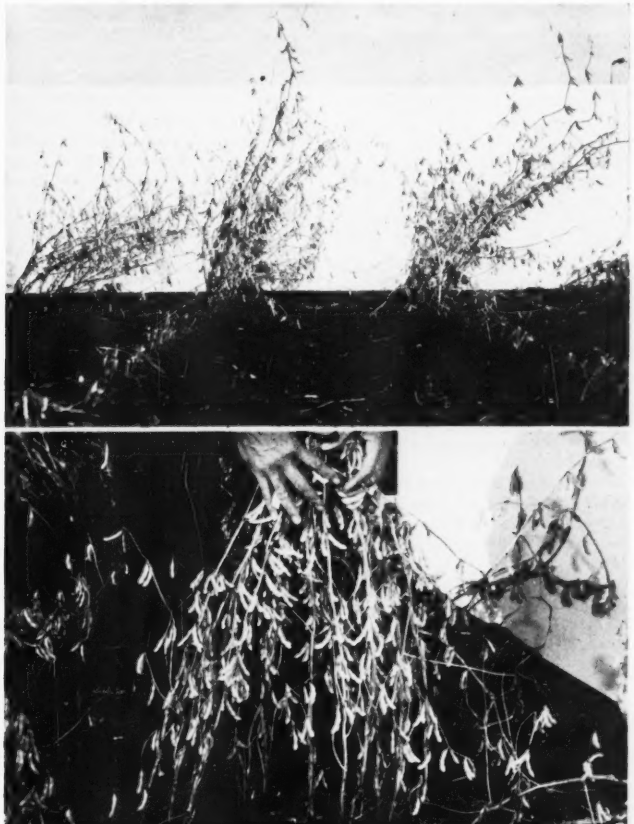
The county seed distribution committee will nominate farmers who are best qualified to increase Adams seed in their counties.

The county seed distribution committees prefer farmers who have had experience in seed production, and who have equipment and land free of noxious weeds to make the seed increases. If you do not get seed of the first increases of Adams soybeans, many of you will probably wish to try this variety later.

THE RECORD OF ADAMS AND OTHER VARIETIES IN IOWA
(1944, 1945, 1946 and 1947)

Variety	Bushels per acre	Lodging Score[1]	Maturity Date	Height Inches	Protein %[2]	Oil %[2]
Central Iowa—1944 Through 1947—11 Tests						
Adams	36.8	1.9	9-30	38		
Lincoln	35.0	2.2	10-1	38		
Illini	32.1	3.1	10-3	40		
Dunfield	32.4	2.7	10-3	39		
Chief	33.0	3.1	10-7	48		
Southern Iowa—1944 Through 1947—7 Tests						
Adams	31.1	2.6	10-8	37		
Lincoln	30.5	2.6	10-8	36		
Illini	29.0	3.5	10-10	39		
Dunfield	27.9	3.4	10-10	36		
Chief	29.6	2.9	10-17	44		
Combined Central and Southern Iowa—1944 Through 1947—18 Tests						
Adams	34.6	2.2	10-3	38	40.6	21.9
Lincoln	33.3	2.4	10-4	38	40.4	21.6
Illini	31.5	3.3	10-6	40	40.8	20.4
Dunfield	30.7	3.0	10-6	38	39.8	21.5
Chief	31.7	3.0	10-11	46	40.3	20.6

[1] Lodging—A score based upon (1) nearly erect to (5) prostrate.
[2] Protein and oil percentages were determined on the moisture-free basis and are the average of 71 tests during the 4-year period 1944-47.



At top is a comparison of Adams with its parents, Dunfield and Illini. Dunfield is on the left, Adams is in the center and Illini on the right. Adams stands up better than either of its parents, it is intermediate between them in height and outyields them. In addition it is higher in oil than either of them. At bottom, you can see the light colored pods of Adams which are predominantly three-seeded. In general appearance and at maturity Adams is more like Dunfield than Illini. The pods of Adams are carried well off the ground enabling good combining.

The picture on the front cover is of Dr. Weber examining an increase field of Adams grown in 1948 near the agronomy farm of Iowa State College. The beans were planted in late May and were 2 feet tall July 15 when the photo was made.

—s b d—

NEW WALL COATING

A wall coating that will stick to polished surfaces and porous materials without a prime coat has been developed by Alton Laboratories, Chicago, reports *Business Week*. The plaster-paint mixture is a compound of processed soybean oil and styrene with silica sand and pigment. Sandy in texture, San-Finish will go on with an ordinary paint brush or with a special spray gun.

According to the firm, one heavy coat of the finish can be used in place of layers of plaster, prime coat, and finish paints.

IMPORTANCE OF THE SOYBEAN IN NUTRITION

By J. F. LYMAN

Chairman, Department of Agricultural Chemistry Ohio State University

There was only one difference in the treatment of these two ducklings: the small one had only wheat gluten which is low in lysine; the larger one had a good protein high in lysine.

(From a paper presented at the Processor-agronomist meeting in Columbus)

THE ANCIENTS thought of food as a gift of a good Creator to lubricate the joints of man. The animal, believed to be a perpetual motion machine, was taken as a model by the alchemists in their attempts to make their ideal engine. Later, near the end of the 18th century, when the source of animal heat was shown by Lavoisier to be a chemical reaction, involving the combination of carbon in the food with oxygen absorbed in the lungs from the air, the animal was compared to a burning candle and the calorie became the standard of food value. Still later the importance of proteins in providing structural material for growth and repair was established by experiment. Within this generation mineral requirements of animals were studied and found to be of primary importance for animal health. Incidentally vitamins were discovered as a by-product of the protein and mineral experiments. Today quality as well as quantity is emphasized in the selection of feeds.

J. F. LYMAN

The composition of soybeans somewhat resembles that of animals being high in ash, protein and fat but low in carbohydrate. Vegetable meat they might be called. It is not surprising that from soybeans vegetable milk, cheese, and gravy, called soy sauce, can be prepared.

The Ash of Soy Beans. Up to about 1906 it was generally believed that all rations commonly used for farm animals contained an excess of minerals, therefore the mineral factor in feeds had no practical importance. About this time Forbes at the Ohio Agricultural Exp. Station, Osborne & Mendel at the Conn. Agr. Expt. Sta. & Yale University and McCollum at Wisconsin began to study the effects of various minerals on growth and health in animals. Soon many other investigators became active students of the problem and minerals assumed a top position in animal feed requirements. Also the experiments with minerals and proteins quickly led to the discovery of vitamins and of their importance.

The analyses show that the soybean contains approximately as much percentage of phosphorus as does the ox. Corn in contrast contains about half as much phosphorus. Also the soybean contains more than ten times as much calcium as does corn: but both soybeans and corn are low in calcium in terms of animal requirements.

The importance of lysine and tryptophane for growth and maintenance of health in animals and the wide differences among proteins in supplying these needs was demonstrated by Osborne & Mendel in feeding tests carried out about 1912. Experiments with amino acids have been widely extended with an ever growing appreciation of their importance in nutrition. Already some feed companies are making claims as to the content of certain amino acids in their products.

A duckling, weighing slightly over two ounces, on a ration containing 28 percent protein, supplied by casein 18 parts and gelatin 10 parts, will gain approximately one ounce a day. If the protein in a similar ration is all supplied by wheat gluten the gain in weight is only ½ ounce in 16 days and the animal remains a runt indefinitely.

The chief defect of gluten protein is its low lysine content. Osborn and Mendel wrote in 1917: "Having demonstrated that the proteins of the soybean, unlike those of other leguminous seeds thus far investigated, are adequate for promoting normal growth, it was important to determine

Table I. Composition of Soybeans Compared with Corn.

	Water	Ash	Protein	Ether Extract	Extract N-free	Total
Soybeans	12.67	4.64	36.69	14.92	31.08	100
Corn	10.5	1.5	10.1	5.0	72.9	100

Table II The Minerals in Soybeans, Corn and the Ox

	Soy Cake %	Soy Meal %	Corn %	Ox %
Total ash	5.18	5.43	1.5	4.5
Calcium	0.34	0.18	0.013	1.24
Magnesium	0.27	0.30	0.142	0.03
Potassium	1.86	2.06	0.300	0.317
Chlorine	0.01	0.005	0.041	0.15
Phosphorus	0.60	0.82	0.341	0.682

Table III, Some essential Amino Acids in Soybean and Other Proteins. As percent of the Total Protein.

	Entire Animal	Casein	Wheat Gluten	Soybeans	Leaves	Corn
Lysine	6.0	6.9	1.9	5.5	5.0	2.1
Tryptophane	1.0	1.8	1.0	1.6	2.1	0.6
Phenylalanine	4.0	5.2	5.5	5.5	4.5	4.6
Cystine & Menthionine	5.2	3.9	4.7	3.0	4.1	4.9
Threonine	4.5	3.9	2.5	4.2	4.8	3.7

From Block and Bolling, 1945.

to what extent the soybean is capable of furnishing the essential vitamins and salts of the diet."

Later they reported in 1917 that the "soybean is the only seed hitherto investigated, with the possible exception of flax and millet, which contains both the water soluble and fat soluble unidentified dietary essentials or vitamins." Later Steenbock at Wisconsin proved that yellow corn, but not the white variety, contains the fat soluble vitamin A factor.

Table IV. The Phospholipids of the Soybean and Some Other Materials.

Egg Yolk	9.1	Percent
Liver	2.1	"
Blood	1.8	"
Soybeans	1.64	"
Lupins	1.55	"
Oats	1.22	"
Flax	0.88	"
Wheat	0.65	"

From Maclean, Lecithin and Allied Sustances

Phospholipids are found in all animals and plants where they are believed to be essential constituents of living cells. Lecithin, a major component of the phospholipid fraction, contains choline which is a member of the vitamin B complex. Choline is known to take an important part in fat utilization, preventing the accumulation of fat in the liver. The importance of lecithin has been demonstrated in various feeding trials in which lecithin, in an experimental ration, is shown to improve the absorption and utilization, preventing the accumulation of fat in the liver.

The importance of lecithin has been demonstrated in various feeding trials in which lecithin, in an experimental ration, is shown to improve the absorption and utilization of vitamin A and carotene. Choline, and lecithin as a source of choline, are growth promoting factors. A duckling on a diet lacking choline makes slow growth for about two weeks, shows symptoms of nervous instability terminating in death. On the same diet plus choline a duckling grows at the normal rate of about one ounce per day. The importance of phospholipid in the feeding of animals is not properly appreciated.

Table V. The Nitrogen-Free Extract and Cellulose of Soybeans.

	%
Galactan (including galactan from raffinose)	4.86
Pentosan	4.94
Organic acids as citric	1.44
Invert sugar	0.07
Sucrose	3.31
Raffinose	1.13
Starch	0.50
Cellulose	3.29
Undetermined hemicelluloses	0.04
Dextrin	3.14
Waxes, pigments, tannins, etc.	8.60
Total	31.32
Galactan from raffinoise	0.24
Percent N-free extract and fiber	31.08

From Street and Bailey, J. Ind. and Engineering Chemistry, 7:853, 1915.

The soybean, like everything else, has faults and weaknesses along with good qualities. The carbohydrates, which the chemist has been able to isolate from the soybean, seems to be mostly a mess of junk. Here we find mainly indigestible pentosans, galactans, cellulose and waxes, along with bitter substances, possibly glycosidie in nature. We would like the soybean better and its feeding value, perhaps, would be higher if it contained no carbohydrate at all. A good job for the plant breeders is to improve the quality or reduce the amount of the nitrogen-free fraction of soybeans.

SUMMARY:

1. Among seeds the soybean is unusually rich in minerals, protein and fat.

2. The minerals of the soybean contain a high proportion of phosphorus, an element of great importance in animal nutrition.

3. The proteins of the soybean are of excellent quality, approaching animal proteins in that respect. Among the amino acids methionine alone is notably somewhat out of balance on the low side.

4. The soybean is high in phosphatids as compared with other grains and seeds. These phosphatids, such as lecithin, might be utilized to a fuller extent than at present as supplement in feeding stuffs.

5. The carbohydrates and associated substances of the soybean are, in general, a poor lot. For the most part they are of low digestibility. Some, like the tannins, are bitter, and at least one, a saponin, possibly has some toxicity. Fortunately most of the bitterness of soybeans is lost on thorough cooking and digestibility is considerably improved at the same time.

6. Striking a balance for the soybean we find a large credit in its favor. Having plenty of soybeans may well give us a sense of security against adversity which might, through partial crop failure, bring scarcities of meat, milk, and eggs. Should such calamity overtake us we would have the soybean as a dependable substitute for the more palatable animal foods to which we are accustomed in prosperous times.

Dr. Wilhelm Rudorf (right) visits with Mr. and Mrs. Geo. M. Strayer in the Strayer home.

BRITISH, GERMAN VISITORS HERE

Distinguished visitors from both England and Germany spent some time at American Soybean Association headquarters at Hudson, Iowa, in October and November as part of a study of the American soybean industry.

They were: H. C. G. Heywood, chairman of Pinchin, Johnson & Associates, Ltd., paint manufacturers of London; F. W. Burmann, managing director of Glasso Paint Products, Ltd., Middlesex; and Dr. Wilhelm Rudorf, director of the Kaiser Wilhelm Institute, Hanover, Germany.

Heywood and Burmann were interested in learning the possibilities of importing U. S. soybean oil into England for use in paints, and also the possibilities of soybean production in South Africa for British empire use. Both men are members of the fats and oils advisory committee of the British Food Ministry.

The two men spent 2 days taking photos of production and handling of soybeans under Iowa conditions.

Other stops in this country included the Northern Regional Research Laboratory at Peoria; processing plants at Decatur, Ill., and the American Paint Manufacturers Association convention in Chicago.

Dr. Wilhelm is a plant breeder for the Kaiser Wilhelm Institute. He is working on a wide range of cultivated plants including potatoes and other vegetables and legumes. He has been trying to develop strains of soybeans adapted to Germany since 1934, and some of his own varieties are now being released.

Two of the Rudorf soybeans are Diekmann "Heimkraft" and Giessen Fi. Dr. Rudorf has been crossing Manchurian and Wisconsin and Canadian strains in an effort to develop varieties that will produce under German conditions.

Dr. Rudorf was also making a study of American hybrid corn. He spent some time with the U. S. Department of Agriculture at Washington, and at the experiment stations of Illinois, Iowa, Minnesota, Wisconsin and Michigan. He left for Germany November 22.

The well-known fire-smothering foam is just one of many uses for soy protein. Here a hot oil fire at Baltimore Municipal Airport is put out in 2½ minutes with the foam.

Versatile Soybean

IT'S USE IN INDUSTRY AND AGRICULTURE

By J. L. GABBY

(Member Soybean Research Council)

FOR MANY years the soybean was little more than a curiosity in this country. Today it is a major industry—second largest cash crop in the far-flung Cornbelt.

First step in its development was its rise as a source of oil and protein concentrate in animal feeding. From this step it has broadened its stride and has become a leader in many different fields.

Its use as an animal feed has been developed to where it is one of the most important of the protein concentrates we have. In the industrial (non-edible) field its continued rise gives great promise for the future.

Industrial uses for soybean products must be divided into divisions based upon the part of the bean from which they are produced. First let us take a list of uses for soybean proteins, such as: Sizing and coating of paper; Stabilizer for cold water paints; Emulsion paints and certain printing colors; Coatings and adhesives for wall boards; Backing paints for floor coverings; Sizing, and finishes in textiles; Polishes and color finishes for leather; Dispersing agents, adhesives and cord sizing in the rubber industry; Synthetic fibers of the wool type; Foaming agent for fire fighting fluids; Printers inks and drawing inks; Sealing compounds.

A second division will be soybean oil. Since its main use today is for edible purposes, this list is not as long as for the protein materials. There are many uses which require amounts too small to be of importance by themselves, but as a group they use considerable quantities of oil. These we will not try to list. The main uses for soybean oil by-products outside of edible uses are: Oil for paints; Special oil compounds for paints and varnishes; Soybean lecithin, a by-product of oil which has many uses in industry including paints, printing inks, rubber, textiles, cosmetics, petroleum products, ceramics, soaps, leather, timber impregnating and agricultural sprays.

Besides these two main divisions we have a third which we will call derived products because in their final form they have little or no resemblance to the materials from which they are made. They really are products of industry, using soybean products for starting materials. These include: Fatty acids for many special uses; Oil compounds for paints and varnishes; Emulsion for insecticide sprays; Water soluble sizing materials for textiles; Antifoam compounds for decreasing the foaming tendency of many solutions; Pharmaceutical products including hormones; Emulsifiers and whipping agents for the food industry.

To complete the story, we should have another division of products yet to come. This would, undoubtedly, be the longest list of all, as even from our vantage point of today, we cannot see the horizon which would give us a suggestion of what will come tomorrow. A crystal ball might help, but as scientists we have difficulty trusting what is seen in the magician's crystal ball. Thus far its has been the scientist's laboratory which has produced the marvels we see today and will produce tomorrow. To dwell on this phase of the soybean in industry is tempting and delightful, but dangerous, because whatever we divine by the magician's method today will be outdone by the scientists of tomorrow.

To begin with, the scientist saw, as did everyone, a small, round bean which grew well in the Orient and produced food for millions of people. After finding that this bean would grow well in this country also, it became important to learn much more about the small, round bean. By laboratory methods which were available, many constituents of this little bean have been determined. We still are learning more and more which will increase our uses for soybean products.

Vitamins

Knowing that soybeans contain protein, the nutritional scientists proceeded to find ways of utilizing the proteins to the best possible advantage in feeds and foods. It has been found that soy protein is very excellent as a protein but that it lacks some of the vitamins found in animal proteins. This story is as yet not complete because these vitamins have not, so far, all been identified. We have, however, learned how to supplement soybean proteins with other natural materials, which are rich in these particular vitamins, so that the over-all result is very satisfactory. Today, it is possible in the laboratory to produce diets which are complete in all known respects using soy products as the only source of protein.

While the nutritionists were producing food and feed products, other scientists were working on the proteins of the soybean, taking them apart to see what was there. As a result of their work we have the long list of uses previously mentioned. They have learned how to convert these

proteins into whipping agents, emulsifiers, adhesives, fibers and films as well as waterproof coatings. This work really has only started. The true patterns by which proteins are made have not yet been found. When the day comes that proteins become completely known, soya protein will hold an enviable position in industry.

When soybean oil was first made available it was thought that all of it would be used in paints and that all of the paint producer's worries were over. This idea was extremely short-lived because a few tests showed the oil as such was not perfect as a paint oil. Many changes have been made in soybean oil to improve its qualities for paints. Some of these have been more or less successful. Considerable quantities of soybean oil have been and are being used in paints. Recently, a new attack has been made on this problem. Extensive chemical reactions have been carried out on soybean oil making it into an entirely new material which is very valuable in paints and varnishes. Here again the field is just beginning to open up to show the boundless possibilities of the soybean industry.

The soybean contains, besides the proteins and the oils we have mentioned, rather sizable quantities of carbohydrates. These are sugars, fibrous material and other compounds of this nature. Thus far very little, if any, use has been made of these constituents in industry. All of the developments are still in the future. Where they will lead, only time will tell.

Hormones

We have been considering the major constituents in the soybean so far as quantities are concerned. Also present are many other chemical compounds which exist in very minute quantities. Some of these have value at the present time and are being utilized by industry to increase the over-all value of the soybean crop to the world. From one group of these minor constituents we are making hormones which fill an ever-increasing need in the field of medicine. From another group are being produced antioxidants and one of the vitamins. When we start looking for materials which are present in amounts of one pound per ton of soybeans, many can be hidden that we know nothing about. Science eventually will find more of these things in the future.

Soybeans in industry now have a past, a present and a future. Most important in a world of turmoil, as we see it today, is the future. Agriculture and industry are growing hand in hand and will continue for generations to come. The soybean will prove over the years that cooperation between all of the forces we have in agriculture and industry will benefit both, as well as the world at large.

"HALLOWE'EN EXTRAORDINARY"

In a typical, Midwest, agricultural town there lived a lady with an eye for the future betterment of her city. This lady was Mrs. Krebs of Hiawatha, Kans. In 1914 she instigated a "Hallowe'en Frolic" for the children of Hiawatha, yes all of them. In order to provide for such a huge party she made the frolic in the form of a parade. Everyone taking part in this event was to be dressed for the occasion with prizes going to the best of each division.

As a result of Mrs. Krebs' work the juvenile pranks in the town decreased and the attendance for the frolic grew. It wasn't long before Hiawatha's Hallowe'en Festival was well known.

This October 30 marked the 34th annual Hallowe'en Festival for Hiawatha, Kans. An estimated 20,000 people were on hand to view the splendor of the huge floats, the comics and the talent show, which has been added in recent years. Hiawatha also invited the visitors to view the results of the harvest in the form of a crop show. Entered in this show were all forms and varieties of the crops represented in this area as well as booths serviced by the industries and business establishments of Hiawatha.

A popular feature of the show was the soybean exhibit of Thomson's Soya Mill of Hiawatha. Theme of the booth was "Research and the Miracle Bean," furnished by the Soybean Crop Improvement Council. There was an automatic turntable with bottles containing soy products. Two movies, "*Progress Through Products*," margarine film, and Allis-Chalmers' "*Soybean Story*," were shown.—*Jerry Wareham.*

BOOKS

Feeds and Feeding

F. B. Morrison's famous book is now 50 years old. And a 21st edition of *Feeds and Feeding*, entirely rewritten, is off the press. This will interest people in the soybean industry generally.

The new edition contains 1,200 pages. All classes of farm animals including poultry, and all farm or commercial feeding stuffs used in the U. S. are covered fully.

There are extensive sections on relating the feeding of concentrates to costs of various feedstuffs, the market demand for livestock of different degrees of finish and the nutritional needs of the animals.

Soy products receive their share of attention. Properly processed soybean oil meal is given its usual place at the head of the list of vegetable proteins for swine or poultry feeding, and close to milk and meat scraps for correcting the deficiencies in cereal grains. It is rated at least the equal of other proteins for feeding most other classes of livestock.

The book finds whole soybeans just as satisfactory, under certain conditions, as soybean oil meal for feeding ruminants and horses. But whole beans have definite limitations even with these animals due to their high oil content and consequent laxative effect if fed in too great quantity.

Sections on soybeans for hay, silage and pasture are included.

FEEDS AND FEEDING. By Frank B. Morrison. $7 prepaid. Morrison Publishing Co., 409 Highland Ave., Ithaca, N. Y.

Soy Division Forms Indian Tribe

Impressive Indian ceremonials held around a council fire blazing on a Mississippi River bluff near Clinton, Iowa, marked the founding last August of an honorary inner circle of top-ranking Pillsbury Mills feed and soy division salesmen to be known as the "Wah-Jhon-ee Khahdha" tribe. Tribal name in rough translation means "successful men." Five men were inducted into the tribe as charter warriors by Clyde H. Hendrix, division president, in his role as "Chief Kakh-Iokal-Tuka." In the picture, left to right: Hendrix, George Standish, Fremont, Ohio; Arthur Paulson, Manchester, Iowa; Hector Limauge, Danville, Ill.; Earl J. McDonald, Holton, Kans.; and Kenneth Hall, Alexandria, Minn. Hendrix received his Indian name in Chicago when Pillsbury presented 5 tons of sheep feed and flour to the destitute Navajos of the Southwest.

USE CITRIC ACID FOR BETTER DRESSINGS

Citric acid, the stuff that puts zip and "bite" in your morning grapefruit, now helps manufacturers produce tastier soybean oil for salad dressing and other food products. A modified refining procedure, worked out by scientists of the Bureau of Agricultural and Industrial Chemistry, of the U. S. Department of Agriculture uses citric acid to improve the flavor and keeping quality of soybean oil.

When refined by this process, the oil tastes better initially and keeps three to five times longer than soybean salad oil refined by previous methods. Very little citric acid is required—3 or 4 ounces is enough for processing a ton of oil.

Experiments that led to development of the new technique were described at the annual meeting of the American Oil Chemists' Society in New York City by Dr. H. J. Dutton, in charge of fundamental oil investigations at the Bureau's Northern Regional Research Laboratory, Peoria, Ill.

Now in commercial use, the Laboratory's procedure benefits soybean-oil refiners and manufacturers, the farmers who grew 200 million bushels of soybeans in the United States this year, and housewives who buy soybean products such as shortening, margarine, and salad oil.

This advance in soybean-oil processing also represents an important step in the continuing efforts of scientists and technologists to improve the oil's flavor stability. Making edible oils behave properly—especially those used for salad oils—has kept chemists perennially on the jump. Soybean oil is a relative newcomer to the salad-oil field. Now the country's major edible oil, it has also been one of the hardest to tame. In spite of the endeavors of research men and refining experts, it stubbornly persisted in developing "painty," "fishy," or "grassy" flavors.

Soybean growers and processors have lost a lot of money as a result of this troublesome tendency of the oil. Because of its poor flavor stability, crude soybean oil usually sells for several cents a pound less than corn oil and at least one cent a pound below the price of cottonseed oil, its chief competitor.

Work at the Northern Regional Research Laboratory on the use of citric acid to improve initial flavor and keeping quality of soybean oil began soon after V-E Day in 1945. American scientists learned that the Germans had been adding citric acid to soybean oil in their refining process. Checking this German practice, chemists at the Northern Regional Laboratory found that it worked, but not in the way the Germans thought. The real function of the citric acid, they discovered, is to neutralize the effect of the minute quantities of metal that get into the oil, principally from the refining equipment.

By serving as a metal "scavenger," the citric acid helps decrease the rate of oxidation of the oil, and so retards development of off-flavors. This discovery enabled researchers at the Peoria laboratory to substantially improve the German procedure. Commercial soybean-oil refiners cooperated with the Laboratory in comprehensive industrial-scale tests of the process, which confirmed experimental findings that citric acid is effective in producing oil of higher quality.

The Laboratory's scientists recognize, however, that soybean oil's flavor stability can be increased only to a limited degree by this type of process improvement. The final answer to this problem, the most serious faced by the soybean-oil industry, can hardly be found unless more is learned about the chemistry of flavor reversion in soybean oil. Fundamental investigations toward this end are being pursued by the Northern Regional Laboratory and cooperating research organizations under authority of the Research and Marketing Act, passed by Congress in 1946 to provide funds for a widely extended program of agricultural research.

—s b d—

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HEADS IOWA PROCESSORS

H. E. Marxhausen, plant manager of Cargill, Inc., Fort Dodge, Iowa, was elected president of the Iowa Processors Association at the organization's annual meeting at the Hotel Fort Des Moines, Des Moines, November 22. He succeeds C. M. Gregory, manager of Farmers Cooperative Co., Dike.

Henry B. Lovig, manager of the Farmers Cooperative Elevator, Martelle, was elected treasurer, succeeding H. F. Lester, Swift & Co., Des Moines.

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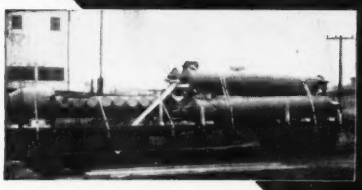
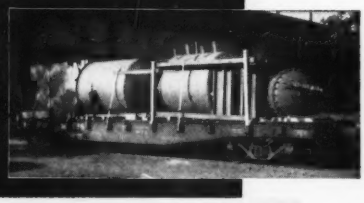
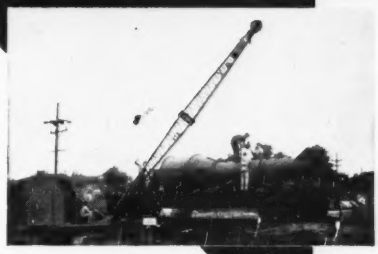




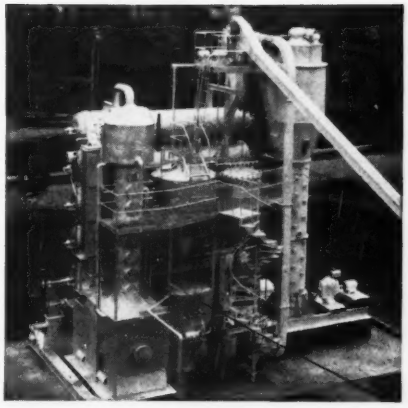
Above and to right are photos of the three flat cars comprising one complete 70 ton Anderson Solvent Extraction Unit as delivered, ready for installation.



● One of the reasons why Anderson Solvent Extraction Units cost you less money is because they are so easy to install. Pre-fabricated, the Unit is shipped to your site in assemblies that are easily installed and connected together.

Unique design makes the Anderson Unit a packaged unit—with most of the installation a factory job. Site installation consists of moving the various parts over to the desired location, setting in place, connecting parts. That is why you save approximately 80% of the normal installation cost when you choose an Anderson Solvent Extraction Unit.

And that's not *all*—Anderson Solvent Extraction Units do not need a building. This saving, plus saving through pre-fabrication, gives an overall saving in installation cost of 80%. Let us tell you more about Anderson Solvent Extraction Units.



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ANDERSON EXPELLERS & SOLVENT EXTRACTION EQUIPMENT

SOY PRODUCT "ZEST" ENHANCES FLAVORS

Production of a new and important product of field grains, a pure form of monosodium glutamate, has been started by A. E. Staley Manufacturing Co., processors of corn and soybeans, in a new $2,500,000 plant at Decatur, Ill., the company has announced. The plant protein derivative, to be known as "Zest," has no flavor of its own, yet has the property of enhancing or intensifying the flavor of any food to which it is added.

The product, more familiarly known as glutamate, is the salt of glutamic acid. It is produced from a portion of the protein of corn, soybeans or wheat. When removed by an expensive and complex process it is valuable as a cooking "tool" to chefs and food processors. Glutamate brings out the more pleasant flavor characteristics of chicken, enhances the "right-out-of-the-garden" flavor of vegetables and brings out the full, rich taste of beef, pork and lamb.

In the Staley plant at Decatur, protein raw material is fed through pipelines from the buildings in which grains are processed. The raw material is dried and treated with hydrochloric acid, which splits the protein molecules into their various amino acid components, of which the major one is glutamic. The glutamic acid is then separated, purified, neutralized and crystallized into a salt form.

There are 23 known amino acids, of which eight or nine are considered essential to human nutrition. At present glutamic acid is not in the "essential" group, being classified as a "luxury," although studies on this subject have not been completed.

While many tests have shown *what* glutamate does to food, no one has yet produced scientific proof of *why* or *how* it is done. It is known only that it increases the flow of saliva, that it creates in the mouth a general feeling of "satisfaction" and provides a more intimate contact between the foods and the taste buds.

In many cases glutamate has the quality of suppressing undesirable flavors. This is particularly true in removing the "raw" taste of some cooked vegetables, in blocking out much of the sharpness of onion, diminishing the peel or "earthy" taste of potatoes and the "fishy" flavor sometimes detected in lima beans.

Earliest use of glutamate to stimulate and enhance food flavors goes back a century or more. Natives in the Far East flavored their food by cooking with it a certain part of a seaweed, *laminaria japonica*, which grew in Asiatic waters.

American and European recognition of the qualities of glutamate did not come until about two decades ago.

Production of glutamate in the United States will be increased by about 1,500,000 pounds a year when the new Staley plant is operated at capacity and the United States will lead in glutamate production. The four major American manufacturers will make an intensive effort to educate the American public to its value.

Staley's Glutamate is packed under the most sanitary conditions in this clean, gleaming packaging room. For large users it is packed in the 100 lb. drums shown here. To the restaurant, hotel and institutions trade, it is sold under the trade name, "Zest," and is packaged in 1, 10 and 50-pound containers.

MARSH JOINS DANNEN

Cecil F. Marsh, well known in the feed trade, has joined with Dannen Mills, Inc., as vice president in charge of the feed division, according to announcement made in St. Joseph, Mo., by H. L. Dannen, president of the company. Mr. Dannen also announced that E. A. Gumbert, associated with the company for more than 20 years, had been elevated to vice president and will continue his duties as manager of the grain and jobbing division of Dannen Mills.

C. F. MARSH

These steps have been taken as part of the company's over-all expansion program, Mr. Dannen stated. Dannen Mills operates feed mills at St. Joseph, Mo., and Red Oak, Iowa, and sells through dealers in the central and southwest. These activities now are being placed under the direction of Mr. Marsh. Mr. Marsh had been general manager of the Glidden Co., feed division, for the past 4 years prior to transferring to Dannen Mills. Before that he was sales manager for McMillen Feed Mills, Ft. Wayne, Ind.

Ed Gumbert is well known to the feed trade, having been active in both the grain and the feed ingredients business for many years. Mr. Gumbert operated Neidorp-Norton Grain Co. in St. Joseph prior to going with the Dannen organization 22 years ago. He had been purchasing agent for Dannen Mills, Inc., for several years prior to the establishment, a year ago, of the company's grain and jobbing division.

In addition to the feed mills, Dannens operate a 1-million bushel terminal elevator in St. Joseph and also a soybean processing plant with 225-ton daily capacity.

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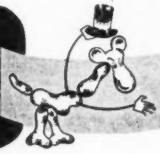

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USDA ESTIMATES 210 MILLION BU. CROP

Prospects for soybeans improved during October, assuring a record crop, reports the U. S. Department of Agriculture's crop reporting board.

November 1 prospects indicate a crop of 210,475,000 bushels, about 2 percent above the October 1 outlook. This total is 5 percent larger than the previous record crop of 201 million bushels produced in 1946, 16 percent above the 181 million bushels produced in 1947 and 56 percent above the average production.

For the country as a whole, yield prospects improved a half bushel per acre during October. Yields in all producing states were improved or unchanged from a month ago, except in Wisconsin and North Carolina, where yields were a bushel below prospects a month ago. Record yields were being obtained in some states.

This has been a very favorable growing season for soybeans. There was practically no frost damage and quality is reported to be very good in most areas because of the long growing season. Improved higher yielding varieties are increasing yields in areas where used.

The indicated U. S. yield per acre of 21.3 bushels is the highest of record, exceeding the previous record of 20.9 bushels in 1939. Last year the yield was relatively low, 16.3 bushels per acre, compared with an average of 18.8 bushels.

A record crop of 1,880,000 bushels from 94,000 acres is the official estimate for Canada's 1948 soybeans, reports *Foreign Crops and Markets*. In 1947, 61,000 acres produced 1,110,000 bushels.

This increase is in line with recent research which shows soybeans to be the best crop in Canada with which to increase the production of edible oils. There appears to be good possibilities that Canada can expand soybean production to replace imports of edible oils.

The International Emergency Food Committee allocated to Canada 4 million pounds of soybean oil or 750,000 bushels of beans for crushing. As it is probable that not more than 1.5 million bushels of the 1948 Canadian crop will reach the crushing plants, soybeans from the United States may be utilized effectively if farmers continue to hold their crops in storage for some time.

Canadian prices generally follow the Chicago prices, but Canadian farmers are reluctant to sell for 20 to 25 cents above the United States support price because of the high prices offered for the 1947 crop. Canadian mills are equipped to process the 1948 harvest and the IEFC allocations of soybeans.

SOYBEANS FOR BEANS*

State	Yield Per Acre			Production		
	Average 1937-46	1947	Prelim. 1948	Average 1937-46	1947	Prelim. 1948
	—Bushels—			—Thousand Bushels—		
Ohio	19.4	18.5	20.0	14,843	17,575	18,160
Ind.	18.0	18.5	21.5	18,486	28,176	29,739
Ill.	21.4	18.0	24.0	55,996	65,196	77,160
Mich.	16.0	17.0	19.0	1,358	1,292	1,216
Wis.	14.5	13.0	12.0	449	338	252
Minn.	14.9	15.0	18.5	3,086	13,800	14,652
Iowa	19.8	15.0	22.5	23,406	26,310	31,972
Mo.	14.2	12.0	20.5	5,608	9,900	14,760
Kans.	10.6	8.5	15.0	1,285	1,887	2,715
Va.	14.3	15.0	16.5	902	1,425	1,650
N. C.	11.5	15.0	13.0	2,333	3,915	3,601
Ky.	14.0	17.5	17.5	729	1,908	2,065
Tenn.	11.5	15.5	19.0	447	930	1,140
Miss.	11.3	14.0	18.0	885	1,330	1,890
Ark.	14.0	12.0	19.5	2,296	3,396	4,816
Other States	12.2	13.1	16.2	2,533	3,984	4,627
United States	18.8	16.3	21.3	134,642	181,362	210,475

*USDA's November 1 estimate.

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SOY FLOUR STUDY BY PEORIA LABORATORY

On Septemer 8, a soybean conference was held at the Northern Regional Research Laboratory in Peoria to discuss the current research program of that Laboratory on soybeans and to make plans for further work under the auspices of Research and Marketing Act funds.

Those attending comprised a broad cross section of all interested in soybeans. Representatives of growers, processors, and users of soybean products were present, including: G. M. Strayer, secretary, American Soybean Association; R. G. Houghtlin, president, National Soybean Processors Association; E. J. Dies, chairman of the board, Soy Flour Association; and A. E. Leger, president, Soy Flour Association.

Progress of present research carried out at the Northern Laboratory, under both regular Department funds and Research and Marketing Act funds, was briefly described. Recommendations of the soybean and flaxseed advisory committee were presented to the group. The research committee of the Soy Flour Association had presented a detailed research plan to this industry advisory committee. The advisory committee, in turn, had emphasized to Research and Marketing Act officials the importance of undertaking work on soy flour.

The group discussed the importance of research to develop proper knowledge of the good qualities of soy flour and to study its proper role and functions in bakery products. During the war soy flour enjoyed increased usage, and because of its nutritive properties should occupy an important place in the American diet. Potential production and use are much greater than present consumption. The group agreed that such research was important and should be undertaken by the Northern Laboratory.

In entering this new field, Dr. R. T. Milner, director of the Northern Regional Research Laboratory, appealed for help from the industry and, since the present group was too large for detailed planning, a small advisory committee was named to meet with Laboratory officials in planning a program of work.

Advisory Committee

This committee, consisting of Dr. J. W. Hayward, Archer-Daniels-Midland Co.; Dr. J. K. Gunther, Central Soya Co., Inc., and L. O. Gill, A. E. Staley Manufacturing Co., with A. E. Leger and L. E. Trempel, the latter an expert on baking flour from Staley's, met in Peoria October 9. Problems deserving first attention and the type of equipment needed for a baking laboratory were outlined. It was agreed that close cooperation was necessary with work on the functional properties of fractions of soy flour now underway at the University of Minnesota under the direction of Professor W. F. Geddes. This work at St. Paul is being financed by the Soy Flour Association.

Work on soy flour at the Northern Laboratory will be conducted by the oil and protein division, where the major portion of the present soybean program is now centered. Dr. A. K. Smith will be in immediate charge.

With this new project underway, the Northern Laboratory will have a most important addition to its present extensive investigations on soybean oil and soybean protein.

—sbd—

GLIDDEN TO BUILD

The Glidden Co. will build a new soybean extraction plant in Indianapolis at an estimated cost of 3 million dollars, according to a recent announcement by Dwight P. Joyce, Glidden's president.

The new plant will include a 1,500,000 bushel grain elevator. The plant, to be built adjacent to the company's feed mill, will consist of several buildings connected by bridges for transfer of material in various stages of processing.

—sbd—

Vitamin U, the anti-stomach-ulcer factor, is found in soybean oil among other products, according to medical scientists.

• At still another difficult time in world affairs, the American farmer has come to the rescue with a record harvest of corn—and near-record harvests of wheat and other crops.

This great accomplishment assures our nation of more than nourishment for our own people alone. It also makes it possible for us to supply food—and thus new hope for the future—to millions of people abroad.

Collecting this harvest for delivery to those who need it is the job of our nation's railroads. And this year they have performed this task faster and more efficiently than ever before.

Credit for this achievement is due to the fine cooperation of shippers and receivers in making possible faster turnarounds of freight cars; to increased railroad operating efficiency; and to the new freight cars, locomotives, and rail facilities the railroads have been adding as fast as manufacturers could supply them.

At bottom, though, the fact that America is able to help the world with food—and with more than food—goes back to the system of individual enterprise and opportunity of which both the American farmer and the American railroads are vital parts.

•

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SOYBEANS IN MINNESOTA

By GEORGE A. POND

Division of Agricultural Economics
University of Minnesota
From address before Minnesota Soybean Institute.

The soybean acreage harvested for beans in Minnesota increased from 12,000 acres in 1938 to 920,000 acres in 1947. Seventy-two percent of this increase occurred in the past 3 years. Soybean production is concentrated largely in the counties south of an east and west line drawn through the Twin Cities. There were 24 counties in 1947 with over 5 percent of the tillable land in soybeans and 14 counties with over 10 percent.

These counties are as follows:

Blue Earth	19.6%	Redwood	10.2%
Mower	18.2	Murray	8.8
Faribault	17.5	Nobles	10.1
Cottonwood	14.4	Nicollet	8.6
Jackson	12.9	Waseca	7.7
Renville	12.4	Dakota	7.6
Watonwan	12.8	Olmsted	6.8
Freeborn	12.3	Sherburne	5.6
Chippewa	10.7	Swift	5.8
Dodge	10.5	Isanti	5.1
Brown	10.4	Sibley	5.6
Martin	10.4	Lac qui Parle	5.4

Changes in the acreages of the principal crops from the average of the years 1937-41 to the year 1947 for the 14 counties with 10 percent or more of the tillable land in soybeans harvested for beans are shown by type-of-farming areas in Table 1. The corn acreage shows an increase of 12.5 percent during this period. Of the acreage released by other crops, the acreages of which were decreased during this period, barley contributed 45 percent, hay 29 percent, oats 16 percent, wheat 8 percent and flax 2 percent. These shifts in crop acreages resulted in an increased proportion of the land in intertilled crops and a decreased proportion in both small grain and hay (see Tables 2 and 3.)

Some of the advantages of soybeans as a crop in southern Minnesota are:

1. The labor requirements are low as compared with other crops.

2. Soybeans do not compete for labor at peak periods as seriously as do most other crops.

3. Soybeans can be planted later than other crops in this area.

4. As a cultivated crop it aids in weed control.

5. It can stand both drouth and wet weather better than most competing crops.

6. There is seldom a total loss since the crop can be cut for hay if too late to mature beans.

Some disadvantages of soybeans are:

1. Soybeans leave the soil so loose as to make it more subject to erosion.

2. The yields are low relative to those of states farther south (Iowa and Illinois yields 36 percent higher.)

3. The average return per acre less than for corn and flax (see Tables 4 and 5.)

4. With both corn and soybean acreages increasing and the hay acreage decreasing, there is considerable danger of serious soil depletion, especially since soybeans are sold as a cash crop.

Soybeans have become established during the war period. Their production was stimulated both by the heavy war demand for oilseed crops and by the labor shortage. As yet, the crop is largely on an opportunist basis.

—s b d—

MORE BEANS IN JAVA

Peanut and soybean acreages harvested and still under cultivation at the end of June in the Federal area of Java (Netherlands Indies) were 25 and 14 percent larger, respectively, than in 1937, according to a report from the American Consulate General, Batavia, says *Foreign Crops and Markets.*

Table 1. Percentage Changes in Acreages of Principal Crops in Counties with 10% or More of Tillable Land in Soybeans from the Average of Year 1937-41 to 1947

Type-of-farming Area	Corn	Oats	Barley	Wheat	Flax	Hay
I	+7.0	—23.7	—85.4	—47.0	—6.1	—30.3
II	+9.2	—11.0	—87.1	—74.4	—19.2	—28.2
III	+18.4	—4.9	—82.6	—78.1	+1.9	—33.1
IV	+15.9	+2.7	—65.4	—80.1	—7.4	—38.0

Table 2. Percentage of Crop Land in Corn and Soybeans in 14 Soybean Counties

Year	Area 1	Area 2	Area 3	Area 4
	%	%	%	%
1937-41	32	36	40	34
1947	54	56	62	52

Table 3. Percentage of Crop Land in Hay in 14 Soybean Counties

Year	Area 1	Area 2	Area 3	Area 4
	%	%	%	%
1937-41	26	19	13	12
1947	18	14	8	8

Table 4. Net Returns from Crops in Nicollet County Based on Average Costs for the Years 1941-45 and Average Crop Yields and Prices for the Years 1938-47*

	Corn	Flax	Soybeans	Barley	Wheat	Oats
Cost per acre	$18.74	$17.62	$16.79	$16.51	$17.67	$16.87
Price per bushel	.95	2.74	1.74	.90	1.32	.51
Value of crop	42.37	33.15	28.36	24.03	21.91	20.90
Net return	$23.63	$15.53	$11.64	$ 7.52	$ 4.24	$ 3.22

*Adapted from Mimeo Rept. 158, Div. of Agr. Econ. Univ. of Minn.

Table 5. Net Return from Crops in Area II Based on 10 Year Average Yields, and Prices and Costs in 1947*

	Corn	Flax	Soybeans	Barley	Wheat	Oats
Cost per acre	$23.27	$29.85	$25.13	$25.49	$25.40	$25.13
Price per bushel	2.25	6.15	2.10	3.25	2.65	1.00
Value of Crop	100.35	74.42	56.07	52.98	43.99	39.40
Net return	$77.08	$44.57	$30.94	$27.49	$18.59	$14.27

*Adapted from Annual Report of Study of Crop Production Costs and Returns in South Central Minnesota, 1947 by Minnesota Valley Canning Compay in cooperation with Division of Agricultural Economics, University of Minnesota.

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Introduced Otootan and Arksoy

Southern farmers owe much to C. K. McClelland, for many years connected with the University of Arkansas College of Agriculture and now on the staff of Mississippi State College at Starksville. His untiring efforts have resulted in the development of varieties of soybeans and other crops especially well adapted to southern conditions.

The Otootan variety of soybean, which comes from Formosa, was introduced into Georgia by Professor McClelland over 30 years ago. He first worked with it in Hawaii while he was stationed there for 4 years. He brought the variety when he returned to this country and from Georgia distributed it to experiment stations throughout the South. Another soybean variety, Arksoy, an important oil bean in Arkansas and other southern states, was developed by Professor McClelland in cooperation with other workers.

Professor McClelland spent almost a quarter of a century at the University of Arkansas. His jolly nature and his belief in hard work and fair play made him an inspiration to his many students there. "Mr. Mac," as he was called by a great host of friends, found time to write a large number of bulletins and articles for scientific journals on soybeans and other crops. Statistical and genetical problems also received his attention.

Professor McClelland pioneered Arkansas' hybrid corn work and cooperated in the development of Traveler oats. One of his most recent contributions to southern agriculture was the development of a new strain of lespedeza, now known as CImax,

C. K. McCLELLAND

in cooperation with the U. S. Department of Agriculture.

Professor McClelland was reared on an Ohio farm, and received his B.S. degree from Ohio State University. After getting his M.S. in Agriculture from Cornell University, he taught at North Carolina State College for 3 years, spent 3 years as superintendent of the Hays Experiment Station at Hays, Kans., and was then sent to Hawaii by the USDA as a specialist in small grains. Later he joined the staff of the Georgia Experiment Station, at Experiment. In 1921 he came to the University of Arkansas as assistant professor of agronomy. In 1946, when he reached retirement age specified by the University of Arkansas, he joined the staff at Mississippi.

Professor McClelland served as president of the American Soybean Association in 1934, when Arkansas played host to the Association for its annual meeting. He has been a member of Alpha Zeta, honorary agricultural fraternity, since 1898, and from 1912 until 1942 was a member of the American Society of Agronomy.

—s b d—

OILSEEDS IN TURKEY

Turkey's 1948 oilseed production exceeds last year's good harvest by almost 40 percent and the prewar output by over 70 percent, as reported by Charles R. Enlow, American Embassy, Ankara, says *Foreign Crops and Markets.*

Although all the oilseed crops were larger than in 1947, by far the greatest increase occurred in flaxseed.

Preliminary estimate of Turkey's 1948 soybean production is 70,000 bushels compared with 55,000 bushels last year; and the 1935-39 average of 37,000 bushels.

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Publications

Solvent vs. Expeller Meals

Are solvent meals as efficient in supplying protein in animal feeding as expeller meals? Recent Oklahoma results would indicate they are.

This past year an experiment was started to compare the nutritive values of cottonseed meals and soybean meals prepared by the solvent processes with those prepared by the pressure methods of fat extraction. The essential difference between the meals prepared by the solvent methods and those prepared by the methods used in the past is the lower fat (ether extract) content of the finished products.

Evidence has been secured in tests elsewhere that unheated solvent meals may not be as efficient as those produced by other methods in feeding poultry and animals that have a critical requirement for quality of protein. The present experiment was designed to compare the efficiency of these two types of meals in feeding ruminants.

Four yearling Hereford steers were placed on false bottom stalls and their urine collected in glass jar through rubber funnels. The feces were caught in gutter boxes and transferred to covered containers at frequent intervals. The amounts of the meals were adjusted to provide the same protein intake in all rations.

The supplements were fed to the steers once daily. The hay was fed morning and evening in equal amounts. Sufficient NaH_2PO_4 was added to the rations supplemented with soybean meal to provide the same phosphorous intake as that provided by the cottonseed meal supplements. The average apparent protein digestion coefficients and nitrogen stored from the rations are given in the table.

Average Apparent Digestion Coefficients of Protein and Total Digestible Nutrient Content, and Daily Nitrogen Storage, From Rations Supplemented With Different Protein Meals.

Ration	Supplement	Apparent % digestibility of protein	Nitrogen stored daily gm.	% T.D.N. of ration
A	Hydraulic cottonseed meal	56.7	13.0	57.5
B	Solvent cottonseed meal	56.6	11.3	58.5
C	Expeller soybean meal	63.6	11.7	58.3
D	Solvent soybean meal	61.4	11.1	57.4

Observations:

1. Steers had higher apparent protein digestion coefficients when soybean meals rather than cottonseed meals were added as supplements to prairie hay to supply the same protein intake. The total digestible nutrient values of the cottonseed meal rations, however, were as high as those of the soybean meal rations.

2. The efficiencies with which steers stored nitrogen from maintenance rations supplemented with pressure treated and solvent treated meals were very similar.

3. Each of the four supplements was palatable at the levels fed.

THE INFLUENCE OF METHOD OF PREPARATION ON THE NUTRITIVE VALUE OF COTTONSEED AND SOYBEAN MEALS. By H. M. Briggs, W. D. Gallup and E. E. Hatfield. Miscellaneous Publication MP-13, Oklahoma Agricultural Experiment Station, Stillwater, Okla.

Meal as Sole Supplement

Use of soybean oil meal as the only protein supplement for the swine ration received some new support in a report from the Torrington substation farm of the University of Wyoming.

Leon Paules, farm superintendent, said that soybean meal used as the only protein supplement in a ration for hogs has given results fully as good as those from a ration in which the meal was reinforced with meat scraps.

Hampshire hogs which were given a standard ration of ground barley and wheat, alfalfa meal, salt and bone meal and which received only the soybean oil meal as a protein supplement, according to the farm superintendent, gained at a rate of 1.603 pounds per day, with a feed cost of $19.24 per 100 pounds of gain.

Hampshire hogs which received the same type of ration, but which also received from 1.5 to 2.5 percent meat scraps in their feed gained 1.656 pounds per day, at a feed cost of $19.18, Paules said. When the meat scraps were increased to between 3 and 5 percent, the rate of gain dropped to 1.506 pounds per day for each animal, and the feed cost per 100 pounds of gain increased to $20.70.

Twenty-one hogs were used in the experiment, with one death loss during the feeding period. The animals were divided into three lots and were fed from September 8, 1947 to January 3, 1948.

SOYBEAN TRIALS IN WYOMING. *Bulletin 267.* Wyoming Agricultural Experiment Station, Laramie, Wyo.

Moisture Test

A simple chemical test that anybody can use to determine whether soybeans are dry enough to store will soon be available.

The test for moisture, which is determined by the color a sample develops when placed in a solution, was developed at Michigan State College, and patents have been applied for. It is adapted to grain, hay or a wide variety of materials.

The test is simplicity itself. A sample is placed in a glass container and the testing chemical is added. The mixture is shaken thoroughly and the observer can tell the moisture content of the soybeans or other product tested by the depth of the color, blue or red, that is developed.

For tests of soybeans, oats and wheat, an indicator chemical is used that gives a

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sharp break at between 13 and 14 percent moisture. Ferric ammonium sulfate (anhydrous) and potassium ferrocyanide are the chemicals that react to give the blue color when added to the grain.

A lot of soybeans with a moisture test of 12.9 percent gave a very faint blue coloration; but one with a 14 percent moisture test gave a distinctly blue coloration, according to S. T. Dexter, the author of the test. Professor Dexter says that large grains such as soybeans or corn should be split with a knife to give greater surface for evaporation.

The test is accurate and it is also foolproof if the proper solution is used. Neither the sample nor the amount of chemical has to be measured.

The test should be of real value to producers who store their own soybeans and grain as the difference of 2 or 3 percent in moisture content may mean the difference between satisfactory storage and loss from grain going out of condition.

A COLORIMETRIC TEST FOR ESTIMATING THE PERCENTAGE OF MOISTURE OR THE QUALITY OF FARM PRODUCTS OR OTHER DRY MATERIALS. By S. T. Dexter, section of farm crops, Michigan Agricultural Experiment Station. *Michigan Agricultural Experiment Station Quarterly Bulletin*, Vol. 30, No. 4.

Hatchability Factor

Is the recently-isolated anti-pernicious factor of liver the same as the chick growth and hatchability factors said to be lacking in soybean oil meal?

It is not known definitely whether this crystalline substance, known as vitamin B_{12}, is the same as the factors needed to produce good hatchability and livability in young chicks. But it has produced growth similar to the animal protein factor and it is possible that it is identical with or closely related to this factor.

A number of conflicting reports have appeared during the past 15 years concerning the adequacy of poultry diets containing soybean oil meal as the only source of protein. One of the earliest observed effects of such diets was a marked decrease in hatchability of eggs produced by hens fed these diets. A later discovery was that the diets also had a marked effect on the viability of the chicks hatched.

Observers concluded that the growth and livability factors were new and unidentified in poultry nutrition: and tentatively that animal proteins as such were not necessary in poultry diets.

The long-sought, mysterious anti-pernicious anemia factor in liver has finally been isolated in pure crystalline form after more than 20 years of intensive research in a different field of investigation.

THE ANIMAL PROTEIN FACTOR. By Ruth Woods. *Borden's Review of Nutritional Research*, Oct. 1948. 350 Madison Ave., New York 17, N. Y.

Trypsin Inhibitor

What is a properly heated soybean oil meal? Researchers at the University of Nebraska have attempted to find a precise definition for it.

The results of their investigation would indicate that autoclaving of soybean oil meal under 15 pounds pressure must be continued longer than 15 minutes to obtain a meal of optimum-growth-promoting value for chicks.

The results also suggest that the absence of the trypsin inhibitor may be used as a criterion for adequately autoclaved meal.

This is a further study of the trypsin inhibitor in soybeans that is being carried on at the Nebraska Station.

TRYPSIN INHIBITOR. VI. EFFECT OF VARIOUS HEATING PERIODS ON THE GROWTH PROMOTING VALUE OF SOYBEAN OIL MEAL FOR CHICKS. By Raymond Borchers, C. W. Ackerson and F. E. Mussehl, departments of agricultural chemistry and poultry husbandry, Nebraska Agricultural Experiment Station, Lincoln. *Poultry Science*, Sept. 1948.

NEWTON, ILL., QUEEN

This is the 1948 queen of the Jasper County, Ill., Soybean Festival. She is Joan Adkins, daughter of Mr. and Mrs. Lloyd Adkins. She was elected in spirited balloting during the festival which included various contests and an agricultural exhibit. The Jasper County festival also elects an annual king, who was George Keller, Jr., son of Mr. and Mrs. George Keller. Joan and George both live on farms and are students at Newton Community High School. The festival is sponsored by the *Newton Mentor-Democrat*.

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GRITS and FLAKES...

FROM THE WORLD OF SOY

Dale W. McMillan, Sr., board chairman of Central Soya Co., Inc., has pledged $103,450 in a 21-township campaign to raise $275,000 for construction of a Citizens Community hospital at Gibson City, Ill.

* * * *

"Continuous Glassed Salad Dressing Process" was an article by Blair Duncan, manager of the mayonnaise division, Rehrig Manufacturing Co., Los Angeles, Calif., in November issue of *Western Canner and Packer.*

* * * *

"Flavor Problem of Soybean Oil. IV. Structure of Compounds Counteracting the Effect of Prooxidant Metals," an article by H. J. Dutton, A. W. Schwab, Helen A. Moser and J. C. Cowen, appeared in the November *Journal of the American Oil Chemists' Society.*

* * * *

Vulcan Copper & Supply Co., Cincinnati 2, Ohio, has issued a leaflet describing the Kennedy continuous solvent extraction system, entitled CONTINUOUS SOLVENT EXTRACTION BY VULCAN.

* * * *

George C. Delp, president of the New Holland Machine Co., New Holland, Pa., has been elected a vice president of the Sperry Corp. He was one of a group who bought the New Holland Co., in 1940, developing it into a prominent farm and industrial machinery manufacturing firm.

* * * *

Garrett C. Van de Riet has been appointed controller of the Detrex Corp., Detroit, Mich. He has been with Detrex for 6 years, on special assignment in the industrial equipment, dry cleaning, oil extraction and solvent divisions.

* * * *

Charles L. Burks, Black Mountain, N. C., has been appointed sales representative for the chemical division of General Mills, Inc., in North Carolina, South Carolina, Georgia, western Virginia, southern West Virginia and eastern Tennessee.

* * * *

A four-page two-color bulletin VA-948 has been issued by Sprout-Waldron & Co., Muncy, Pa. It lists advantages, specifications and construction details of new model "VA" vertical mixers.

* * * *

Shellabarger Grain Co. and Shellabarger Soybean Mills have been consolidated into one corporation under the name of Shellabarger Mills, Inc., announces W. L. Shellabarger, president, at Decatur, Ill. The firm operates a soybean processing plant at Pana; and elevators at Pana, Dunkel, Clinton, Ohlman, Raymond, Westervelt, Elwin and Warrensburg, Ill.

* * * *

Chemical development of styrenated linseed oil, a new synthetic process oil for use as a protective coatings vehicle, has been announced by Spencer Kellogg & Sons, Inc., Buffalo, N. Y. Styrene was combined successfully last year with soybean oil by Kellogg and introduced as "Keltrol." Further experiments resulted in the styrene-linseed combination.

* * * *

Perry S. Forthmann is now associated with M. M. Bosworth Co., Memphis, Tenn. He will live in St. Louis and direct sales of burlap and cotton bags in the Midwest. He has had 23 years experience in the textile bag industry, recently as manager of Chase Bag Co. at St. Louis.

A. J. SURRATT, DEAN OF CROP REPORTERS, DEAD

Andrew J. Surratt, 67, federal crop statistician of Springfield, Ill., was killed November 18 when the car he was driving overturned on Highway 66 near St. James, Mo.

Mrs. Surratt, who was injured slightly in the accident, said the car slipped off the highway on the soft shoulder and overturned. Mr. and Mrs. Surratt were driving to Clinton, Okla., to spend the Thanksgiving holiday with a daughter.

Surratt was the dean of federal agriculture department statisticians in the nation. He had been with the department 35 years. He was federal crop statistician in Aberdeen, S. D., in 1913-14, and went to Springfield in 1922.

Surratt was well known to readers of the *Soybean Digest,* as he had been contributing information on the soybean crop regularly to these pages since the founding of the *Digest.* His reports were always among the most complete of those turned in by any correspondent.

His big job was estimating the size of Illinois corn, soybean and other crop production. This work took him to farms, grain elevators and country towns all over the state. He was one of the best known agricultural authorities in Illinois.

—s b d—

PROCESSOR YEAR BOOK

Year Book and Trading Rules, 1948-49 of the National Soybean Processors Association is now off the press and may be obtained from the Association offices at 3818 Board of Trade Bldg., Chicago 4, President R. G. Houghtlin announces.

The book contains trading rules governing purchase and sale of soybean oil meal and oil as amended September of this year; the official methods of analysis of the American Oil Chemists Society; and in addition the constitution and by-laws and code of ethics of the Association, its officers, direc-

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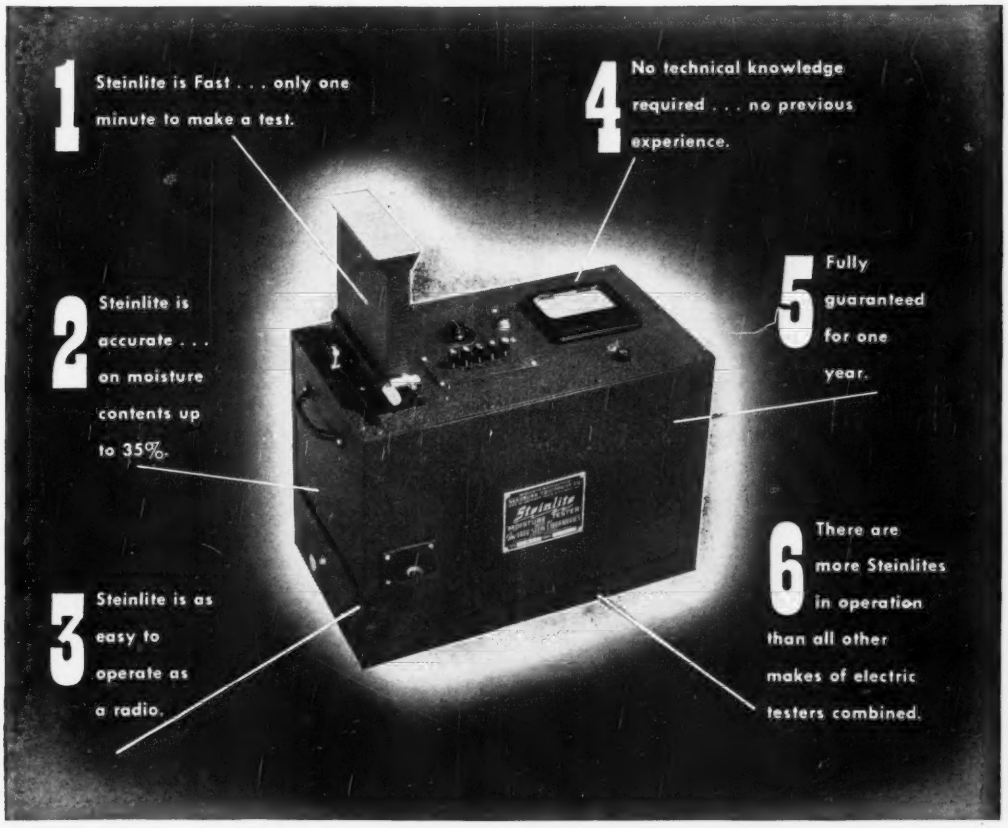
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Thomas E. Riley describes production of plywood in an article in November POPULAR SCIENCE MONTHLY *under the title, "Unrolling Logs for Plywood."*

* * * *

Tetramethylolcyclohexanol, commonly called "TMC," is a new chemical product first announced at the National Chemical Exposition in Chicago in October. Developed by Dr. Harold Wittcoff, of the General Mills research section, it is used to increase the drying power of soybean and other oils.

* * * *

Details of Central Lecithin's nature and its application to chocolate, caramel, fudge and other candies are outlined in a brochure recently issued by the products division of Central Soya Co., Inc.

* * * *

Two additions to the research staff of Pillsbury Mills, Inc., Minneapolis, are Ralph A. Marmor, formerly of A. E. Staley Mfg. Co., who will work on the processing of vegetable oils; and Lois A. Barr, recent graduate of Ohio State University, who will conduct research in the chemistry of edible fats and oils. Both are under W. H. Goss, associate director of the department.

* * * *

Illustrations and tables explaining the complete line of No. 148-1 S. D. crushing and grinding mills manufactured by the Bauer Bros. Co., Springfield, Ohio, are contained in a brochure released by the firm.

* * * *

Dr. F. A. Frank, until recently in charge of research work on soybean fertilization and related problems at Purdue University Agricultural Experiment Station, is now conducting a research project on guayule in dry-land farming at the Texas Agricultural Substation, Winter Haven, Texas.

* * * *

A new cooperative, Production Cooperative Association, with headquarters at Girard, Kans., has taken over the soybean processing plant of the Farmers Union Jobbing Association in that city. The transaction also included grain elevators at Girard, Farlington and Buelah.

* * * *

Dwight P. Joyce, president of the Glidden Co., Cleveland, Ohio, has announced the promotion of James C. Rankin to the post of executive assistant. Rankin, formerly manager of specialty sales, joined the Glidden Co. in 1942.

* * * *

The 1949 yearbook and calendar of Minneapolis-Moline Power Implement Co., Minneapolis, Minn., features school safety. Boys pictured on the calendar include three sons of Bon D. Grussing of the firm's advertising department.

* * * *

The development of the industrial utilization of soybeans in Missouri is discussed in a recently completed industrial and agricultural survey of the state. This report was prepared by Ernest L. Little, president, Research Associates, Columbus, Ohio, at the request of the Missouri State Chamber of Commerce and the Missouri Resources and Development Commission.

* * * *

Business associates recently honored R. H. Horsburgh, vice president of the board of the Glidden Co., who recently retired after 50 years in business, 31 of them spent with Glidden. He will remain a director of the firm.

* * * *

Dr. E. W. Crampton, professor of animal nutrition, MacDonald College, McGill University, Quebec, Canada, has become the third scientist to receive the 1948 American Feed Manufacturers Association $1,000 award for outstanding contribution to animal nutrition research. He received the award at the Association's annual meeting in Chicago November 27.

* * * *

"Engineers of Plenty," is the story of M. W. Kellogg Co., New York City industrial engineers, in the November issue of FORTUNE.

* * * *

Karr & Co., Columbus 15, Ohio, announces the formation of a fertilizer division which will handle all types of fertilizer. William V. Karr will head the fertilizer division and Michael B. Karr the grain and feed division.

* * * *

Paul Meyer has been named assistant elevator manager of the Industrial Soya Co., Toledo, Ohio. He will be in charge of storage operations and grain purchasing. Meyer was formerly manager of the Ottawa County Cooperative Association, Oak Harbor, Ohio.

* * * *

William H. Danforth, president of Ralston Purina Co., was honored on the anniversary of his 55th year as a member of the St. Louis Merchants Exchange with a reception on the floor of the Exchange November 15. He has been a member longer than any other living person.

tors and committees for 1948-49 and list of members.

The constitution and by-laws of the Association have been amended to allow corporations or firms that are consumers of soybean oil or oil meal to become associate members. Thirteen such firms are listed as associate members. —s b d—

SEEDBURO REPRESENTATIVES

Seedburo Equipment Co., Chicago, Ill., has announced appointment of Waterloo Mills Co., Waterloo, Iowa, as exclusive distributors in that state for the Seedburo line of grain, seed and feed handling and testing equipment.

Waterloo Mills Co. was established in 1924 as manufacturers and wholesale distributors of flour and feeds. The Iowa territory will be covered by five Waterloo Mills salesmen which will assure Seedburo customers better and more efficient service. They are: J. B. Fox, Burt Laufer, Harold Myers, Wallace Campbell and A. E. Fox.

—s b d—

DAMAGE FREAK

—Photo courtesy Feedstuffs

The dark streaks you see in the picture are trails of oil down the side of a soybean storage tank of Quincy Soybean Products Co., Quincy, Ill. Spontaneous combustion ruined over 40,000 bushels of soybeans in the tank late last summer. The tank was filled in July with soybeans bought at that time and apparently in good condition. When it was opened the last of August the beans in the upper two-thirds of the bin were charred and burned. Oil from the beans oozed out through the sides of the tank in such quantities that it flowed out into the street nearby. Twenty-five thousand bushels of soybeans that had been in the bottom of the tank since the preceding October were still undamaged, according to Irving J. Rosen, President of the firm.

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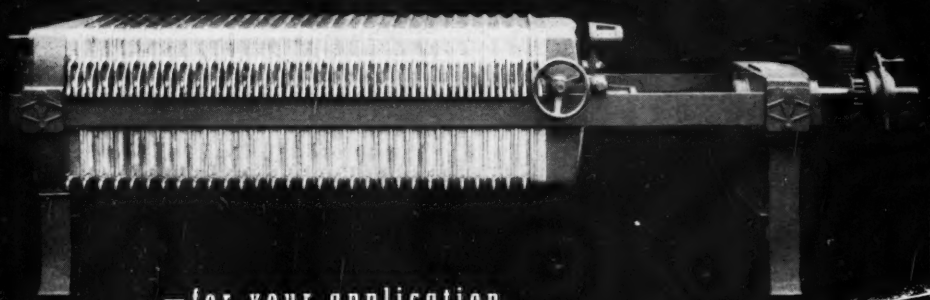

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WASHINGTON Digest

By PORTER M. HEDGE

Washington Correspondent for The Soybean Digest

Brannan's Program During the 5 weeks since the election it has become evident there will be a wholesale re-writing of farm laws. Among others these will include the Aiken-Hope farm act passed last June, the AAA Act of 1938, and the Commodity Credit Corporation charter law which now limits the government's authority to store grain.

Secretary Brannan doesn't have his legislative program fully worked out, but you can count on him emphasizing at least three things:

1. A strengthened price support program for the major crops.

2. An enlarged soil conservation program.

3. A huge government-managed grain storage program.

There are increasing signs that Secretary Brannan will come out for 90 percent of parity price floors for the basic crops, but using the modernized parity formula rather than the present one.

In general, the modern parity would raise parity prices for most livestock and livestock products, and lower it for the grains, cotton and potatoes. Right now, soybeans would be raised 7 cents a bushel by the modern parity formula.

Brannan wants to avoid rigidity in his price support program. He wants to allow some leeway for meeting unusual situations. At the same time, he is in favor of relatively high support prices for the basic crops as long as they are part of an integrated program for big production and consumption, and with farmers taking real responsibility for making them work.

The Democratic leaders in Congress want 90 percent of parity supports for basic crops. They'll be joined by a number of farm-state Republicans, such as Hope of Kansas and Andresen of Minnesota to mention only two.

The department of agriculture is now blueprinting a grain storage program that makes the "ever-normal-granary" of the Thirties pale by comparison.

Officials have in mind roughly a billion bushels storage for corn, and up to about half that amount as a maximum for wheat. Soybeans might be added to the storage program on a limited scale later on, though this isn't prominently discussed now.

The idea on corn is to have a big enough supply in any one year—even when the crop is short—so there will be no need for wide fluctuations in livestock numbers and the meat supply.

Roughly a fourth of the corn would be stored on farms under loan, much the same as now. About a fourth more would be stored in sub-terminal elevators along key lines of transportation for easy movement.

The remaining half would be stored in permanent warehouses built solely for the purpose of storing surplus corn and keeping it in the areas where it will eventually be needed.

Grain in these warehouses would be controlled by the government, and the storage might actually be built by the government in the event the industry isn't interested in the program.

This type of grain storage program is now fairly well developed in USDA, and is being pretty generally accepted by the majority leaders in Congress.

As a counterpart of this program, there is some talk of revising the livestock price support system. Basing livestock support prices on feeding ratios rather than on a percent of parity is getting considerable attention, both in USDA and among congressional leaders.

On soil conservation Brannan first wants to get broad enabling legislation from Congress to deal with the physical soils problem. Then he hopes to organize soil conservation work to fit the legislation.

There is a real possibility that AAA and Soil Conservation Service, the two main federal soil conservation agencies may be combined.

Margarine Tax Repeal A flood of margarine tax repeal bills will be introduced with the opening of Congress—and with a better chance of success even than last spring.

Only thing that's worrying the margarine forces now is that supporters of repeal will think the cat is practically in the bag and ease up in the fight for repeal before it's won.

The makeup of the new Congress augurs well for margarine tax repeal. Out of the 260 members in the House who voted for repeal last March, 200 have been returned. Of the 106 members who voted against repeal, 83 were returned.

In the Senate 42 of the 47 members who voted for repeal will be in the new Congress, and a dozen or so new members are rated as favoring repeal.

Twenty-three of the 30 Senate members who were rated as unfavorable to repeal are in the new Congress.

Counting in the new members, a clear majority for repeal is indicated at this stage in both houses.

Margarine forces are out for clear-cut repeal of both the federal taxes and license fees. They want no compromise on a pro-

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hibition of sale of colored margarine, as proposed by the butter faction.

National Grange took a position in support of tax repeal at its national meeting in Portland last month. The margarine resolution said:

"We favor the removal of all the taxes on oleomargarine if and when effective means are taken to prevent its sale in imitation of butter."

Basic Crop? There is a possibility that soybeans and flax may be included within the legal definition of "basic" crops in new farm legislation adopted by Congress this winter.

Making these two crops "basic" commodities has been recommended by the goals planning committees of the Department of Agriculture for some time.

A similar proposal is being submitted to Secretary of Agriculture Charles Brannan for possible inclusion in his legislative recommendations to the new Congress.

Corn, wheat, cotton, tobacco, rice, and peanuts are the only crops which now fall within the legal definition of basic commodities.

Should soybeans and flax be so defined, they would become eligible for the same rate of support as corn and wheat—a rate which probably will be kept at a somewhat higher level than the non-basic commodities.

At the same time they probably would become subject to acreage allotment and marketing quota provisions of the AAA Act of 1938 the same as the other basic crops.

Export Allocations Recent fats and oils export allocations include:

Two hundred thousand bushels of soybeans to Denmark (commercial procurement) in place of 1.8 million pounds of soybean oil previously allocated.

Thirteen thousand long tons of oilseed cake and meal to Austria (commercial procurement) available by cancellation of 15,000 long tons previously allocated to Bizone, Germany.

Four million, thirty-two thousand pounds of cottonseed oil to United Kingdom (commercial procurement) in exchange for an equal amount of palm kernel oil.

Three million pounds of lard to Cuba (commercial procurement) as an advance against its January-March allocation.

One hundred and thirty thousand pounds of lard to Dominican Republic (commercial procurement).

Seventy-two thousand pounds of soybean oil allocated to the Netherlands West Indies in place of an equal quantity of cottonseed oil previously allocated (commercial procurement).

Five hundred sixteen thousand pounds of soybean oil allocated to the Department of the Army to meet needs in Korea (PMA procurement).

Three hundred eighty thousand pounds of industrial soybean oil allocated to the United Kingdom (commercial procurement).

Soybean Prices Some USDA officials look for the price of soybeans to crawl upto around the $3 a bushel mark at Chicago. They attribute much of the strength in the soybean market to the fact growers have avoided glutting the market.

Commodity Credit Corp. is still buying beans for the Army account. Up to the last of November, less than million bushels had been purchased to fill an Army allocation of approximately 5 million bushels for the last quarter of this year.

Meals Tight? USDA officials say the oilseed meal situation is beginning to get a little tight in spite of the indicated surplus for the year as a whole.

Reason is the grind of oilseeds hasn't yet reached its peak. When this happens, the supply is expected to be in surplus again.

In the meantime, USDA officials won't discourage foreign countries from buying meals elsewhere as they have in the past. Allocations on meals may also be kept a little longer than officials had planned.

Goals for 1949 Announcement of the 1949 soybean acreage goals is due almost any time. A recommendation for a little more than 10 million acres for harvest is expected.

—s b d—

CONTINUE GRAIN BUYING

Paul G. Hoffman, head of the Economic Cooperation Administration, has announced following a conference with President Truman that the government will continue to handle grain purchases for European recovery.

Hoffman said the President felt it was desirable under present conditions not to turn back to private dealers the grain purchasing for ERP countries.

The ECA administrator noted that his recovery agency had agreed last September 1 to return the grain purchases to private hands December 1 except for some occupied and other European territories where there are distribution difficulties.

He said contracts that have been signed with private grain men since September 1 will be honored. He said the President did not indicate how long he wanted to continue grain purchases through the government.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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In The MARKETS

SOYBEAN AND MEAL MARKETS GENERALLY STRONG

Markets for soybeans and soybean oil meal were strong the first 23 days of November with nearby supplies tight in both commodities. However, some weakness developed in the soybean futures market the last week of the month, and this was reflected in both oil and meal.

The month's spread in December soybean futures at Chicago was 28c, while bulk soybean oil meal basis Decatur gained $14 per ton between Nov. 1 and 23.

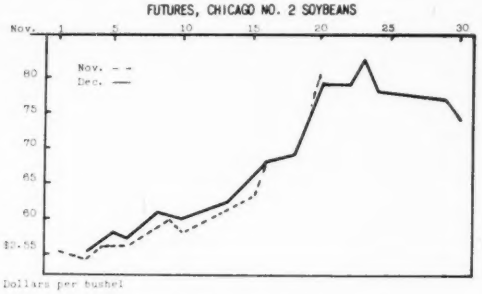
The soybean oil market, and vegetable oils in general, was very steady, with a spread of only 1¼c for the month. There was a fairly good demand, mostly from large refiners though there was also some call from industrial sources.

Producers were slow to let go of their soybeans despite rising prices and a large share of the crop is being held in farm and elevator storage. Carlot receipts in Chicago reported by Production and Marketing Administration for 3 weeks in November were some smaller than the corresponding 3 weeks of last year, in spite of this year's larger crop.

Production of soybean oil meal was said to be near capacity but supplies were still short of demand. Some processors had their output sold through February by Dec. 1. Nearby supplies were hard to locate and were mostly coming from resellers.

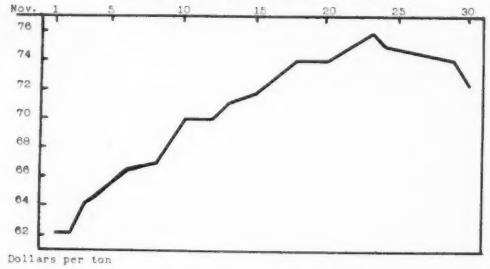
But with the easiness developing in the market the last of the month, buyers were less anxious and activity in the market was light.

FUTURES, CHICAGO NO. 2 SOYBEANS



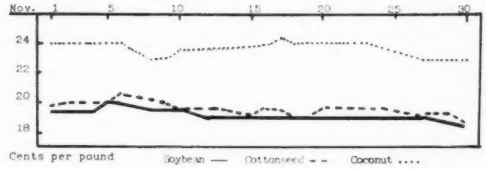
Dollars per bushel

BULK SOYBEAN OIL MEAL, DECATUR BASIS



Dollars per ton

CRUDE VEGETABLE OILS, TANKCARS



Cents per pound Soybean —— Cottonseed - - Coconut ....

December No. 2 soybeans opened at $2.54 Nov. 4, reaching a high of $2.82¼ Nov. 23, and closing for the month at $2.74.

Bulk soybean oil meal Decatur basis opened at $62 for the month. High was $76 Nov. 23 and close was $72.50.

Crude soybean oil in tankcars opened at 19¼c and closed at 18½c for the month. High was 20c Nov. 5 and 6. There was a fairly good trade in soybean oil much of the month, though only light activity after the easier market developed the latter part of the month.

The 4-5c spread between coconut and soybean and cottonseed oils continued during November.

NEW YORK SOYBEAN OIL FUTURES, DEC. 1*

Close: Dec., 20.00B; Jan., 19.00B; Mar., 18.25B; May, 17.90B; July, 17.25B; Sept. and Oct., 16.25N. No sales. N—nominal. B—bid.

MEMPHIS FUTURES CLOSINGS, NOV. 30*

Soybean Meal: Dec., flat 71.75; Jan., 63.75-65.25; Mar., 57.80-58.35; May, 55.60-56.25; July, 54.50-55.25. Sales, 1,100 tons.

*Reported by Chicago Journal of Commerce.

• SOYBEAN INSPECTIONS. Inspected receipts of soybeans during October, the first month of the 1948-49 season, were the largest of record for that month and totaled 35,861 cars, according to reports to the Department of Agriculture. This compares with 30,830 cars in October 1947 and 28,847 cars the 5-year average for the month of October for the crop years 1942-46.

The quality of the 1948 soybean crop, as indicated by the October inspections, is considerably below that of last season largely because of high moisture. Only 78 percent graded No. 2 or better compared with 92 percent the same month a year ago and 82 percent the 5-year (1942-46) October average.

The total of 82,828 cars of soybeans inspected during the crop year 1947-48 was the smallest in the last 5 years, according to reports to the Department of Agriculture. The largest total cars inspected was 84,357 during the crop year 1945-46. September inspections showed a considerable increase over the preceding month and totaled 3,420 cars compared with only 849 cars in August. The average for the month of September for the crop years 1941-45 was 927 cars. The larger inspections in September this season were due in part to the unusually early marketings of soybeans from the 1948 crop.

The quality of the 1947-48 soybean crop was considerably better than the preceding year, 87 percent grading No. 2 or better compared with 70 percent last season and 89 percent the average for the three years 1943 through 1945. Of the September inspections 84 percent graded No. 2 or better compared with 80 percent in August.

• SOYBEAN SUPPLIES FOR 1948-49. Supplies of soybeans for 1948-49 from present indications will be the largest of record and are estimated at 208 million bushels as against only 187 million bushels available for 1947-48, according to Production and Marketing Administration. Carryover stocks on October 1, were the smallest in 7 years of record.

Disappearance of soybeans in 1947-48 was the smallest in 5 years and totaled 184.2 million bushels. This compares with 200.2 million in 1946-47 and 195.5 million bushels in 1945-46. Crushings of soybeans for oil, including about 3½ million bushels of new seed crushed in September, were the second largest amounting to 161.3 million bushels according to reports of the Bureau of the Census. This was 9 million bushels less than the quantity crushed in 1946-47 but was about 10 million bushels above the five-year (1942-46) average.

The use of soybeans for flour and grits was almost double the previous season amounting to over 17 million bushels. This compares with 9 million used in 1946-47 and 7 million the 1942-46 average. The increase in soy flour production was due to heavy exports which amounted to almost 16 million bushels in grain equivalent during the 1947-48 season.

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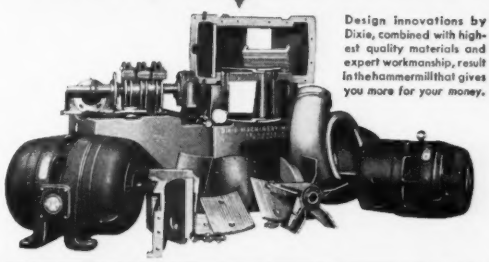

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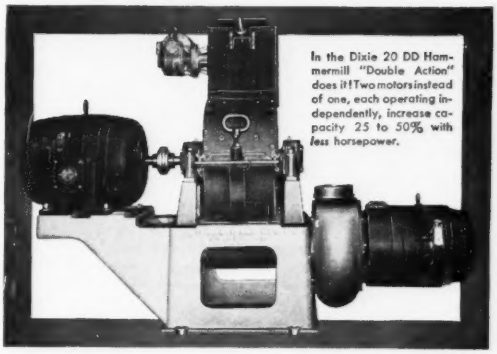

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• STOCKS OF SOYBEANS. Only 2,525,000 bushels of old soybeans were in storage in all positions on October 1, the Bureau of Agricultural Economics reports. These are the smallest carryover stocks in the 7-year series available, comparing with 5,361,000 bushels a year ago, and 4,326,000 bushels on October 1, 1946.

Stocks of 1,807,000 bushels on farms, and 120,000 bushels at interior mills, elevators and warehouses, both estimated by the Crop Reporting Board, are the smallest on record. Commercial stocks of 130,000 bushels at terminals, reported by the Production and Marketing Administration, also are relatively low. Stocks at processing plants, as reported to the Bureau of the Census, included both old and new crop soybeans, but this total has been adjusted to include only 468,000 bushels of old soybeans, on the basis of information obtained by the Crop Reporting Board.

• SOYBEAN GLUE IN PLYWOOD. Consumption of soybean glue by the plywood industry in August was 2,896,000 lbs. compared with 1,751,000 lbs. in July and 1,827,000 lbs. in August of 1947.

Consumption of phenolic resin glue by the plywood industry in August was 3,608,000 lbs. compared with 2,680,000 lbs. in July and 2,971,000 lbs. in August a year ago.

Stocks of soybean glue totaled 1,588,000 lbs. August 31 compared with 1,734,000 lbs. July 31.

Consumption of soybean glue in September was 2,827,000 lbs. Sept. 30 soybean glue stocks totaled 1,507,000 lbs.

• COMMERCIAL GRAIN STOCK REPORTS. Production and Marketing Administration's commercial grain stock reports for November. (1,000 bu.)

	Nov. 1	Nov. 8	Nov. 15	Nov. 22
Atlantic Coast	63	322	504	598
Gulf Coast	72	0	598	748
Northwestern and upper lake	679	936	1,083	1,140
Lower lake	3,197	3,644	4,321	5,117
East central	2,503	3,331	4,457	4,534
West central, southwestern and western	1,904	2,359	2,585	2,732
Total current week	8,418	10,592	13,548	14,869
Total year ago	8,662	12,073	13,112	13,823

• LOANS AND PURCHASE AGREEMENTS. The Production and Marketing Administration of the U. S. Department of Agriculture announced that 1,531,927 bushels of 1948-crop soybeans had been placed under Commodity Credit Corporation price support loans through October 31, 1948. Price support purchase agreements for soybeans totaled 130,168 bushels.

• STANDARD SHORTENING SHIPMENTS. Reported by members of Institute of Shortening and Edible Oils, Inc., in pounds.

Week ending November 6	6,263,921
Week ending November 13	6,299,671
Week ending November 20	6,947,517
Week ending November 27	5,751,004

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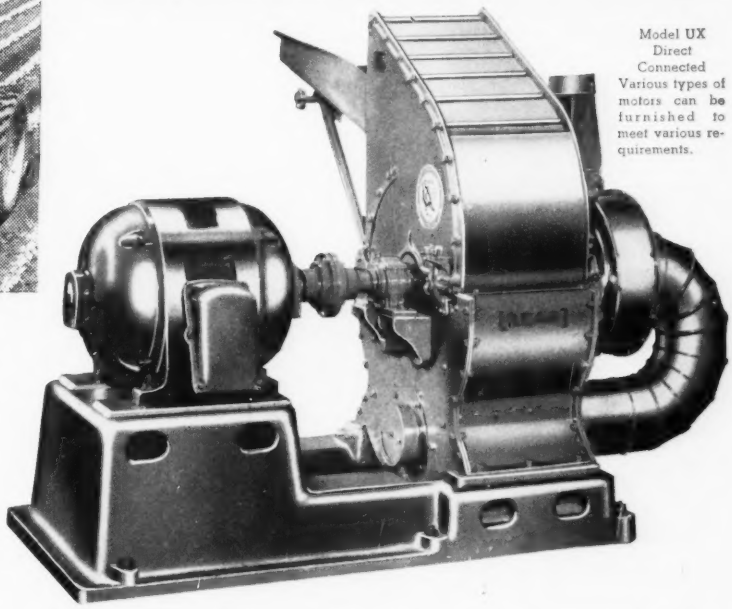

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Specialists in mill manufacturing, the JAY BEE organization brings mill operators all the advantages of big capacity by strong, long lasting grinders, engineered to produce quality milling continuously, even under the most difficult conditions . . . and to give big production at low operating costs.

To meet the needs of the soybean industry, many different models and sizes of mills are necessary. JAY BEE Soybean grinders are made in sizes from 5 to any desired horsepower or capacity.

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E. B. Harrison	Box 375, Cairo, Georgia
O. D. Padgett	Sandersville, Ga.
A. F. Shirk	Box 523, Canton, Ohio
Jay Bee Sales Co.	220 Broadway, New York 7, N. Y.
Jay Bee Sales Co.	Jackson, Tenn.
M. E. Padgett	Bennettsville, S. C.
Jay Bee of Texas	1904 S. Akard St., Dallas, Texas
W. H. Hust, Jay Bee Co.	1031 N. Humphrey Ave., Oak Park, Ill.
W. H. Scribner	216 S. 35th Avenue, Omaha, Nebraska
W. E. Berling	P. O. Box 6084, Indianapolis, Ind.
A. E. Thompson Co.	718 Washington Ave. N., Minneapolis, Minn.
Douglas W. Palmer	1631 59th Ave. S. W., Seattle, Wash.
J. D. Vance	P. O. Box 497, Murfreesboro, Tenn.
J. R. Sorrells	Dothan, Alabama
R. E. Perkins, Mgr., Jay Bee Sales Co.	1508 S. First St., Louisville, Ky.
Lima Armature Works	Lima, Ohio
C. Y. Wier, Jr.	P. O. Box 331, Utica, New York
Irwin A. Sedberry	1428 W. 26th St., Indianapolis, Ind.
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